PAPER TRADE JOURNAL

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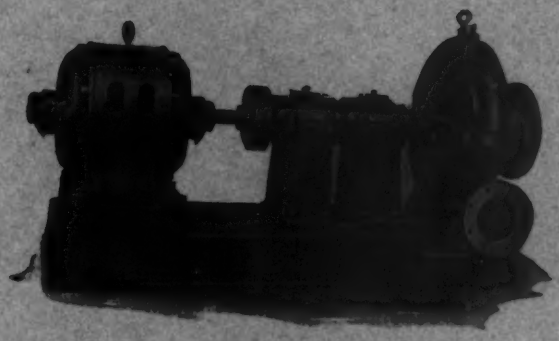

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. K. HOPPIN, Secretary

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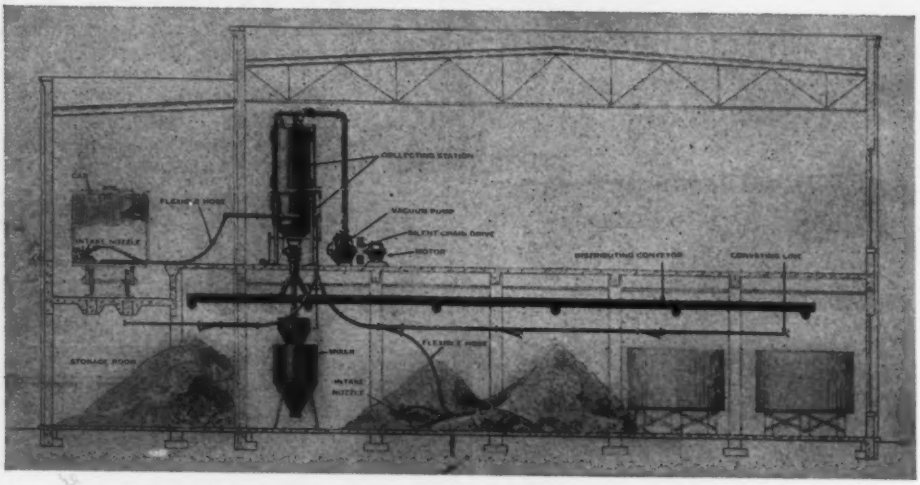
The Modern Paper Fillers



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PAPER TRADE JOURNAL

With Which Is Combined

PULP AND PAPER

Vol. LXXXI, No. 20 Thursday, November 12, 1925

The Magazine of the Paper Industry

Big Paper Mill Merger Is Believed Under Way

Consolidation in St. Maurice Valley, Which Is Now Thought To Be Taking Place, May Reach Very Large Proportions—Manitoba Pulp & Paper Co., Ltd., Begins Work on New 250 Ton Pulp and Paper Mill—St. Lawrence Paper Mills To Acquire Control of Tourville Lumber Mills Co.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 9, 1925.—It now seems to be generally accepted that a merger of paper companies in the St. Maurice Valley, province of Quebec, is under way and it is thought that this may be the beginning of a movement which may reach very large proportions. Semi-authoritative announcements that good progress is being made are quoted in the newspapers and some go as far as to give details of the plans. For instance the Belgo-Canadian Paper Company, Limited, is said to have purchased control of approximately 65 per cent of the St. Maurice Paper Company, Ltd., of Cap Madeleine from the Union Bag Paper Corp. at a price rumored to be about $110 per share. The next step is said to be the purchase by the new holding company formed, of President Biermans' controlling interest in Belgo. Reports current are to the effect that new financing to the extent of about $12,000,000 is being arranged for Belgo and the holding company. The Belgo financing, it was said, will take the form of $2,000,000 bonds and $4,000,000 notes, while about $6,000,000 of preferred and possibly a block of common would be issued for the holding company. It was further suggested that Sir Herbert Holt, at present vice-president of Belgo, will become president of the new company. It is understood that Toronto as well as Montreal capital will be interested. The recent sharp rise in Union Bag, which was taken by some to mean that the merger interests were buying control of this company on the open market so as to possess themselves of control of St. Maurice, is now said to be largely due to the company's new pulp manufacturing process which is said to be from 75 to 90 per cent perfected. Certain of Union Bag's water power plans are also regarded as very promising.

3,000 Quebec Fire Rangers Laid Off

With most of the forests of the province covered by several feet of snow and snowshoes in use in nearly all districts to the North, the forest fire menace for the year 1925 is now over, and the 3,000 fire rangers employed by the forest protection service during the summer and fall have been laid off for the winter. Forest fires this year fall far below last year's figures, there being only 500 reported up to the end of September, as compared with 636 last year, and while a few small forest fires broke out during October, they were easily extinguished. This year's forest fire losses amount to about 20,000 acres of timber, not more than half of which was merchantable timber, as compared with the losses during 1924, when over 200,000 acres of timber fell prey to the flames. No figures are available as to damage caused during October, it being stated recently that no further reports would be given out prior to the publication of the annual report to be submitted to the Legislature next winter. Two hundred forest rangers who were employed by the Forest Protection Service during the summer have now gone into the forestry department and will be employed there during the winter in seeing that the regulations as to size of timber cut, etc. in the various lumber camps are respected, while they will also see that hygiene is maintained in the camps.

Work Under Way on New Pulp Mill

Work is now underway on the 250-ton pulp and paper mill being erected by the Manitoba Pulp and Paper Co., Ltd. The contracting firm of Carter-Halls-Aldinger, of Winnipeg, have already taken in, via Fort Alexander, some 400 tons of supplies to the Winnipeg River site, and initial operations have been started by a gang of 50 men. The schedule of the company provides that the mill should be constructed and paper actually produced by December, 1926. According to Col. H. C. L. Jones, vice-president of the Spanish River Pulp and Paper Mills, Ltd., which is behind the venture, the mill when completed will be very similar to the one now owned by the latter company at Espanola, Ont., and the construction conditions on the two sites were also alike. As a result of negotiations between the civic hydro electric department and the officials of the Manitoba Pulp and Paper Company, there is a possibility that the power site at Pine City and the company on the basis of 60,000 h. p. to the company and 40,000 to the city. The J. D. McArthur interests now hold the lease for the water-power development but under the terms of this the company is only permitted to develop power for its pulp mill enterprise.

St. Lawrence Paper Co. To Expand

There is a rumor here that the St. Lawrence Paper mills, of Three Rivers, is to extend its sphere of operations by acquiring the control of the Tourville Lumber Mills Company; it is said that negotiations for the acquisition of either a large block of the stock or the control of the company are to all intents and purposes completed. The Tourville Lumber Mills Company has long been successfully engaged in the lumber business at Louisville, P. Q. about half-way between Montreal and Three Rivers. The company's holdings include lumber mills and 340 square miles of timber limits.

Dominion Spruce and Fire Seed Plant

The Dominion Government seed extraction plant at New Westminster, B. C. is expected to start operations on Nov. 1st. A consignment of 100 sacks of Sitka spruce cones from the Prince Rupert district is practically assured for the British Forestry Commission, London.

Demand For Paper in Chicago Continues Good

All Divisions of the Paper Market Are Active with a Specially Satisfactory Request for Coarse Papers Because of the Approaching Christmas Holidays—Outlook for Printing Papers, However, Said Not To Be as Encouraging as Recent Business Would Indicate

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, November 7, 1925.—The Chicago paper market remains substantially good, with bad spots here and there, and with a large number of good spots that more than offset the bad ones. All divisions of the paper trade are thriving, and the merchants are making money, except possibly the paper stock houses, many of which are said to be losing money because of cut-throat competition. This condition has been prevalent for some time in the Chicago paper stock circles, but there is nothing to be done but wait until either the market is spoiled for all or made a safe one for the new investors. On the other hand, there are paper stock dealers who use their figures and charts to show them the least little margin of profit, and in that way are making large turnovers. One merchant said that although sometimes they were forced to refuse odd lots from smaller dealers, usually the price could be made low enough to give the stock dealer a profit. But this is deadening to the market perhaps as much as the practice of buying high simply to get the material.

Fine Paper in Good Demand

Fine paper merchants all reported that this week has been better than the same week in October, and also better than last week, but this comparison with last week is thought unfair because the last week of the month is usually poorer in business than the first. The comparison with the same week in October is gratifying, especially in the increase in sales, although the paper houses themselves do not give the outsider the appearance that they are any busier than before.

The outlook for printing papers, however, is not as encouraging as seems would be apparent from last month's business. The report that mail order houses have taken advantage of the new postal rates does not seem to have a real foundation in Chicago. There is wholesale disagreement about the new rates. Catalogues which have been printed on bible paper not only displease the eye of customer, manufacturer and printer, but they hurt the eye to read them. One large house which was formerly in the habit of buying carload lots of postal cards, has not purchased one carload since the inception of the rates. Complaints are coming from all sides. The idea that America forgets things quickly does not seem to be true either of prohibition or the postal increase.

Coarse Paper Market More Active

Coarse papers are flying about Chicago more than any other kind. Wrapping papers of all kinds are being demanded in quantities which seem unprecedented, although the merchants do not seem to take the trouble to ascertain this. Kraft papers remain the hope of the Chicago paper trade. The business centering around them is the peak of the trade here. This year a concensus of estimates place the increase over last year at more than 25 per cent. A prominent kraft dealer was wreathed in the most beaming of countenances when asked what the prospects are for continuing heavy business. "Every year," he said, "they are finding new uses for kraft paper, exemplified in the latest use for cement bags. This offsets the increase in production, which has also been heavy. The increase in demand and production is a good sign, and there is no indication of either falling off. Of course the thing to worry about is the possibility of over production, but this seems to me remote, thank our lucky stars."

Christmas wrappers and other Christmas paper, especially holly paper, were demanded this week in larger quantities, the first sign of the coming holidays which has struck the general paper trade in real volume. Coupled with this is the steady demand for stock papers, covers and wrappings, which is enough to make the coarse paper dealers radiant. Everything is optimism with them at this hour.

Paper Stock Dealers Struggling Along

Some of the waste paper merchants are inclined to think that the mills are not turning over fast enough, although this is a matter of some study. Other paper stock remains at the same dead level except kraft paper and pulp, which is slightly high because the supply is low and a new supply somewhat doubtful.

General News of the Trade

The Lake Shore Paper and Twine Company, which moved into larger quarters at 522 West Erie street recently, has settled itself in the new enlarged quarters, which enables it to carry a more complete stock, insuring better service to its customers.

Box board mills are chiefly concerned with the holiday requirements of the box manufacturers now engaged in making Christmas containers for the allied or unallied industries. Most of them are working full time.

The James White Paper Company has just issued its monthly sample to the trade, in the form of an uncommonly fine sample of cover paper, "Alert," done into a small booklet, with a picture of an elk on the front cover. The sky is a background of black, signifying winter, with a whiteish mountain in the rear. The special paper and decoration featured is Lodestone, and the cover design is mentioned on every page. There are only four pages, utilizing the principle of concentration. The product advertised is made by the Hampden Glazed Paper and Card Company of Holyoke, for whom the James White Company are distributors.

William Kirchheimer, of the Kirchheimer Brothers Paper Company, dealers in kraft paper, is one of the most optimistic of the coarse paper dealers. He not only predicts that his business will be good for the coming year, but that this is merely a reflection from business of all kinds all over the country. Basically, good crops from the large farmer class starts a good business year in the fall, when the farmers make purchases from the proceeds of their harvest. This means all kinds of demands for paper.

A rumor to the effect that the Seaman Paper Company, of 410 North Michigan boulevard, is not selling the papers of the Bryant Paper Company, of Kalamazoo, because the latter company is about to open a Chicago office, was stamped as untrue Saturday when a representative of the PAPER TRADE JOURNAL called on the Seaman Company. Not only are they selling Bryant papers, for which they are the exclusive Chicago agents, but also other papers which they were reported to have stopped. When asked who starts such rumors, the manager of the Seaman Company said he did not know.

Prices for the general trade have been about the same for the last month in Chicago. The last changes were in kraft paper and pulp, and Southern kraft paper, a little more than three weeks ago.

The Marquette Paper Company, which was incorporated early in October, has moved into its new offices in the Transportation Building, 608 South Dearborn street. The company is handling the following papers: Clear Title Bond, Investmore Bond, Brookline Bond, Bankable Bond, Potwell Ledger, Boulevard Bond, Printer's Bond, and Marquette's Perfect Index. The company is also agent for Success Bond, Conference Bond, Glazier Bond and Putnam Ledger, manufactured by the Neenah Paper Company, of Neenah, Wis.

A New Method of Producing Bleach Liquors

WHEN our technical staff first attacked the problem of absorbing Liquid Chlorine to produce bleach liquors, there was available only the old-fashioned tower system. We first suggested the desirability of using the refrigerative effect caused by the vaporization of the Liquid Chlorine by means of our evaporating coil now in successful use in more than a score of paper mills and several large textile mills.

The development announced herewith has been brought about by our realization of the need for a method allowing more rapid absorption and more flexible utilization of existing bleach house equipment. The accompanying cut shows the construction of the chlorine absorber and its location in the chlorinating system. This new equipment possesses the following advantages:

Simplicity in construction and operation are secured by the fact that the vaporization of the Liquid Chlorine and its subsequent absorption by the milk of lime solution is entirely effected within the chlorine absorber. In connection with the unit batch system with the ton container as the base for the desired batch, it furnishes foolproof operation with any grade of operating labor.

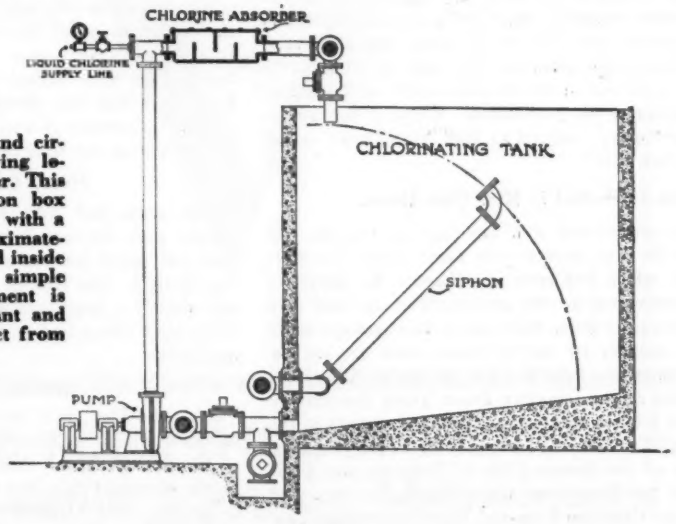
Refrigerative Effect of vaporization is utilized even to better advantage than with the coil, since it is localized just where the heat of reaction of the combination of the chlorine and the lime is momentarily concentrated.

Rapidity of Absorption is such that chlorination can proceed at the rate of 2,000 pounds of chlorine per hour or better, depending on the capacity of the circulating pump. The advantage of this speed for large operations is evident.

Flexibility is a prime feature of this method, in that a single "chlorine absorber" can be used to successively chlorinate any number of tanks.

Accurate Control of the liquor, when the unit batch system is not used, is assured by the fact that liquor is available for testing at the exact point of chlorination.

Developments such as this, in the manufacture, transportation and use of this highly technical product, accrue primarily to the benefit of our customers. Because consumers appreciate this fact, the Mathieson Company is today the largest shipper of Liquid Chlorine in the United States.



Chlorinating tank and circulating system, showing location of new absorber. This consists of a cast iron box about 2 ft. in length, with a cross-section of approximately 10" x 10", equipped inside with a series of simple baffles. This equipment is made at our own plant and may be obtained direct from us.

The MATHIESON ALKALI WORKS, *Inc.*

250 PARK AVE., NEW YORK CITY

PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE

Paper Trade in Toronto Fairly Satisfactory

Considering All the Handicaps That Have Been Encountered Past Twelve Months Have Been Reasonably Good—Few New Concerns, However, Have Been Started and Old Ones Have Been Obliged To Go After Business More Intensively Than Usual To Succeed

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, November 9, 1925.—Today marks the observation of the annual Thanksgiving day in Canada and the paper trade as a whole, when the past twelve months are considered, has reason to be thankful that its members have come through with such good results. While the various houses have not made as much money as in some years past and have found it more difficult to show a profit on turnover, owing to increased cost of doing business, conservative buying and smaller orders by customers, and heavy stocks, the volume in the aggregate has been very satisfactory.

Nearly all wholesale paper merchants report that as good a business has been done this season as last and the outlook is steadily improving. There have been very few failures, collections have been watched closely and credit curtailed. Orders have been more difficult to secure, entailing more intensive selling and more liberal advertising by mail, sample or house organ. One result is that very few if any new concerns have started up and there have been some amalgamations.

To succeed now in the paper distributing line requires a larger investment of capital, heavier and more representative stocks, a bigger trained sales force, centrally located premises and all up-to-date facilities, which a few years ago did not count for so much. The jobber in the Canadian trade today must keep step with the procession.

The condition of some merchants in the paper line is well expressed by an Ontario man, who remarked this week: "Yes, I started business four or five years ago, after traveling for an old established paper concern. My trade has grown but all that I have made has been put back in the business. I added a number of special lines and had to keep adding. I reached a point a short time ago where I had to branch out on a very extensive scale and bring in new and outside capital or stand still and go back. I was not financially prepared to take the big forward step after controlling my own business and, when an offer came from an older and stronger house, to sell out at one hundred cents on the dollar, I was not long in accepting the proposition. There is business to be secured but the resources required to land it are more varied and powerful today than ever."

Paper Men Interested in New Club House

One of the finest recreational club buildings in Canada will shortly be erected on St. Clair avenue near Yonge street, Toronto, by the Granite Club, which has been in existence for fifty-two years. The new structure will be the attainment of an ideal in a club home and no expense is being spared to make it possess every modern facility. A number of leading paper men are on the directorate. Among them are John F. Ellis, of Barber-Ellis, Limited, honorary president of the Canadian Paper Trade Association, and the dean of paper jobbers and manufacturing stationers in the Dominion; F. L. Ratcliff, president of the Ratcliff Paper Company and former president of the Rotary Club of Toronto, and I. H. Welden, president of the Provincial Paper Mills, Toronto, and former president of the Canadian Pulp and Paper Association.

New Power Line Completed

The Abitibi Power and Paper Company, Iroquois Falls, Ont., last week turned on the power from its Island Falls plant to the mills of the company. The latter is looking ahead to be assured of sufficient power for an expansion program and some time ago bought the Island Falls plant from the Hollinger Consolidated Gold Mines. It is the ultimate intention of the Abitibi Company to extend its output of news print from 500 to 800 tons daily, but just at present construction will not be undertaken owing to overproduction in news print. The company has its engineers abroad studying and learning the best points of the industry on the Continent. Again, the expansion of the Abitibi Company to 800 tons daily would mean that the plant to all intents and purposes would reach the limit of economical production in one unit. In order that the completed unit might produce paper at the lowest possible cost, it would be necessary to make certain changes in the present mills. These requirements are being studied and, should the company ultimately produce more than 800 tons, it would then erect a new mill. While the power has been turned on at the mills from the new power development plant it will not be used by the new electric boilers, which the company has installed to use its surplus power until the end of the present month. In the meantime, the power plant will be tuned up to assume its load by December 1.

Canadian Forests Loss by Fires

Speaking before the Kiwanis Club in St. Thomas, Ont., last week, Dr. C. D. Howe, dean of the faculty of forestry of the University of Toronto, rather startled his hearers when he told them that for every hundred acres of Canadian forests destroyed by fire, only one acre was being replanted. He pointed out the great loss of the standing timber each year by fire and how this loss would ultimately imperil the greatest wealth producing industry of the Dominion unless conservation, more adequate protection and reforestation were undertaken promptly and efficiently.

Pulpwood Prospects Are Fair

C. W. Cox, of Port Arthur, Ont., who is one of the largest dealers in pulpwood in the province, says that the outlook for the coming season is only fair. There is considerable stock on hand at the present time and Mr. Cox does not anticipate that the cut will be as large as last winter. Railroad requirements for ties are also less and the price offered for both pulpwood and ties is somewhat lower than last year at this period. Labor is fairly plentiful and it looks at present if there will be more men available than the local situation can take care of.

Heavy Camp Supplies Going In

During the past week supplies to the value of many thousand dollars were forwarded from Fort William and Port Arthur to pulp and paper companies and private operators in the Thunder Bay district. The trek of bushmen to the woods has commenced and already a large number are at work. Operators will have a fairly busy winter and so far there has been no trouble in recruiting labor.

Will Be Model Paper Town

Espanola, Ont., is a model pulp and paper town of 4,000 inhabitants which has been built up by the pulp and paper activities of the Spanish River Pulp and Paper Mills. It is the intention of the Manitoba Pulp and Paper Company, an allied organization, to see that Fort Alexander, Manitoba, is planned on similar lines, with the company providing everything necessary in a municipal way, according to Col. C. H. L. Jones, one of the vice presidents of the Spanish River Mills. Excavation has been started at Fort Alexander on the new plant, which the contractors are required to have completed and paper turned out by the end of 1926. Some 400 tons of supplies have already been sent forward for constructional purposes.

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By keeping felts in their original state of Porosity during their life they insure more uniform *Pressing, Drying and Finishing*

of 227 already sold 117 were repeat orders.

BIRD MACHINE COMPANY

South Walpole Massachusetts

BIRD MACHINERY

8603

Wisconsin Paper Mills Make Improvements

While No New Plants Have Been Erected During the Year There Have Been Numerous Additions and Installations of New Machinery In an Effort To Increase Production and Improve Quality—All the Representative Concerns Figure in the Betterments

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 9, 1925.—Paper mills in Wisconsin are humming with increased capacity provided by new construction and equipment in the past year. While no new paper mills have been built, there have been additions, among them several large ones, installation of new machinery and other efforts to increase production.

Kimberly-Clark Improvements

Among the major projects of the year were those of the Kimberly-Clark Company, Neenah, Wis., at its paper mills in Neenah, Kimberly and Niagara.

This concern has completed the construction of a large four-story warehouse, 140 by 50 feet, at its Neenah mill. It is built of brick, re-enforced concrete and steel and is to be used for the storing of its products, particularly Cellucotton products, and raw material. A part of it also provides new office quarters for the chief engineer and his staff for the overflow of the main office building. Room is also provided for a laboratory.

Another large warehouse is being constructed near this building. It is six stories high and the dimensions are 80 by 90 feet. It is built on the site of a former steam power plant which has been dismantled, as the plant has adequate facilities elsewhere. The builders are the Wisconsin Engineering Company, Green Bay, while C. R. Meyer & Sons, Oshkosh, built the other warehouse.

An old building formerly used as a laboratory was torn down this year, and the site has been sold to the Neenah Paper Company which will erect an office building here.

At Kimberly the company is rebuilding its hydro-electric power plant which was in use there for the last quarter century. All equipment was taken out and new installed at a considerable expense. The new equipment includes three horsepower water turbines with three 900 K. V. A. generators, which are direct connected. The reconstruction work gives the company one of the most modern low head installations in the country.

The Niagara mill of the Kimberly-Clark Company was closed for several weeks this year to permit the rebuilding and modernizing of two paper machines which had been used for about 20 years. The work was done by Rice, Barton & Fales, Worcester, Mass. The construction work on the Kimberly plant was by C. R. Meyer & Sons, Oshkosh, and the turbines and generators were furnished by Allis-Chalmers Company, Milwaukee.

Building Filter Plants

Both the Fox River Paper Company and the Interlake Pulp and Paper Mill of the Consolidated Water Power and Paper Company, of Appleton, are building filter plants with large settling basins for the purpose of purifying the supply of water used in the manufacture of paper.

Lakeview Paper Co. Installs Boilers

Lakeview Paper Company, of Neenah, a concern owned by Sears, Roebuck & Company, the Chicago mail order house, engaged a Milwaukee firm to install two new boilers in its plant this year.

The Marathon Paper Mills Company, of Rothschild, Wis., has made several improvements in its mills. At the Marathon plant two Bellmer bleaching engines were installed whereby the capacity has been increased to 110 tons. Oliver filters also were installed for the reclaiming of all waste stock in the white water. At the plant of the Ontonagon Fibre Company, the concern has completed the installation of a five-cylinder 128-inch board machine for the manufacture of Kraft board. This machine is equipped with 70 48-inch driers and has a capacity of about 65 tons a day.

McGillan-Asmuth Paper Mills, Menasha, Wis., this year has added the latest folded towel machine and the most modern oval toilet machine.

Northern Paper Mills Build Power Line

The Northern Paper Mills of Green Bay have just won a legal victory in court which permits them to proceed with the construction of a big power line from White Rapids on the Menominee River to Green Bay, to supply the paper mill with more adequate power. The project will cost in the neighborhood of a million dollars. The first towers are now being erected at Green Bay and appraisals are being made for the last of the unpurchased land, for the right of way.

Wisconsin Tissue Mill Builds Boiler House

The Wisconsin Tissue Paper Mill of the Thilmany Pulp and Paper Company, Appleton, is installing a new boiler house and stack with the idea of increasing efficiency and reducing the smoke nuisance caused by the old type of equipment. The new equipment includes two 250 horsepower boilers fired by pulverized fuel furnaces, the whole being automatically controlled.

Nekoosa-Edwards Co. Builds Dam

Nekoosa-Edwards Paper Company is building a 20-foot dam near the mouth of Four Mile Creek, south of Wisconsin Rapids, which will impound a lake about two miles long and three-fourths of a mile wide. This is to supply the mill with pure water for the manufacture of paper.

De Pere Paper Co. Installs Machine

The DePere Paper Manufacturing Company, DePere, one of the firms of the state, has purchased a boiler plant in DePere and is installing a paper machine which will be in operation in a few weeks. It is planned to add another machine soon. Its sister concern, the DePere Pulp Paper Company, was organized this year and took over a flour mill for the manufacture of pulp.

Badger Tissue Mills in New Quarters

About two months ago the Badger Tissue Mills, of Kaukauna, moved into its new quarters, taking over the two-story stone constructed building formerly occupied by the Kaukauna Paper Company. The company installed a towel interfolder and cornucopia napkin folding machine.

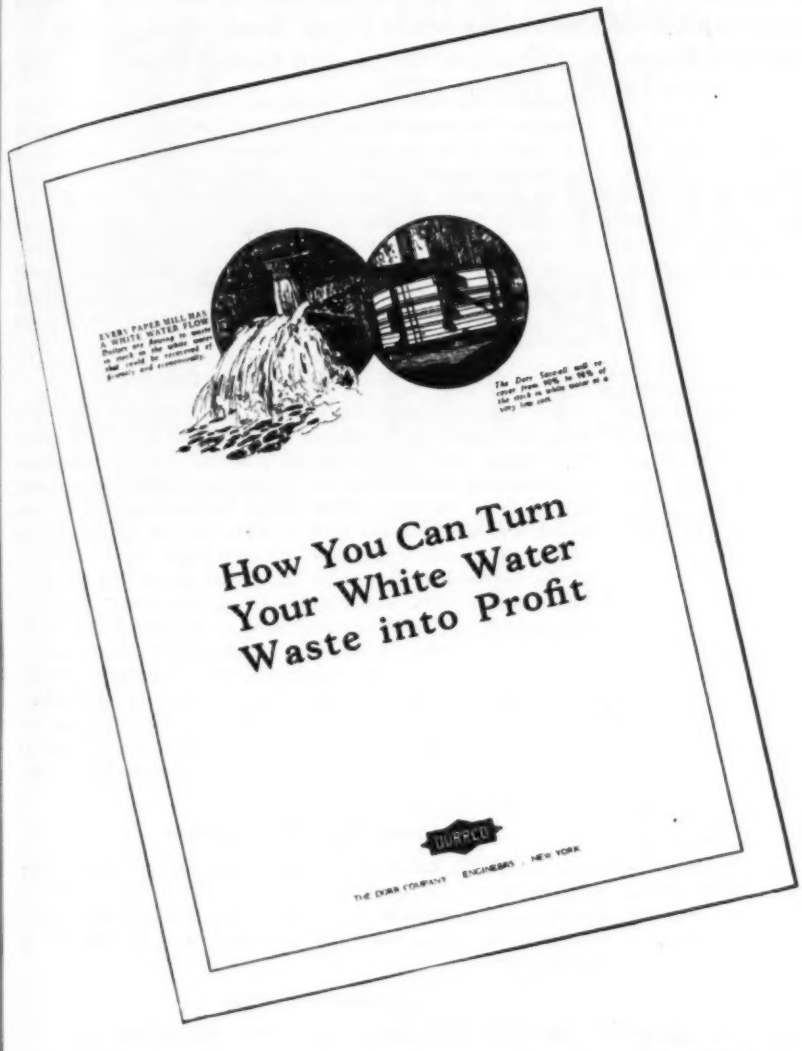
Installation of a J. O. Ross Engineering Corporation drying system on a 145-inch board machine was made in the plant of the John Strange Paper Company, of Menasha, this year. The mill also installed a dusting and sorting system for handling waste paper and erected a new roof over one of its paper machine buildings.

The Cornell Wood Products Company, of Cornell, Wis., put forth efforts to intensify and increase production. It has sped up production on its 130-inch machine running test liner, and to this end purchased a Valley Iron Works continuous breaker beater, increased the speed of the machine 210 feet per minute and added the necessary pumps and motors.

Improvements at Stevens Point

An important construction project for Stevens Point was made possible November 3 when the board of aldermen of that city unan-

(*Continued on page 38*)



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INVESTIGATION TESTS DESIGN EQUIPMENT

Demand for Paper in Philadelphia Is Improving

Revival Extends to All Grades of Paper But Is More Especially Noticeable in the Coarse Paper Division—Trade Relations Committee of the Philadelphia Paper Trade Association and Typothetae Meet—Shevlin Paper Co. Organized To Deal in Coarse Papers

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 9, 1925.—With the first week of November there was a distinct revival in demand for all grades of papers needed for the advance holiday business and for general industrial purposes. While the greatest demand was centered in the coarse paper division the fine paper market also enjoyed a considerably improved business which indicated that the printing industry is beginning to assume a livelier trend with the closing months of the year.

Fine Paper Fairly Active

While the fine paper market is not on a parity with the coarse paper market it has been developing a vastly improved condition over that of the past several months. Whatever business is to be had however is confined to meeting the moment's needs. But prices are firm and do not at this time show any deviation from the quotations of the past six months. The trade anticipated the lower quotations on newsprint might have a tendency to soften the market but so far there have been no changes noted and are not likely to be effected for the remainder of the year.

Coarse Papers in Greater Demand

The most prosperous division of the trade is the coarse paper market where expanding business is the most encouraging evidence of the greater activity in the industrial world. All grades are now being sought with a few of the specialties showing an advance in prices. The Kraft grades are holding at the stabilized prices of the past two months and stocks in warehouses are being cleaned up relieving the overstocked conditions which prevailed in the early autumn months. Corrugated products such as containers are increasing in demand as the holidays approach. Mills are behind on shipments and urgent needs cannot be met at this time by the manufacturers. Grey Bogus has advanced in the Philadelphia market, $2 per ton and sheathing $1 per ton. Building papers of all grades are holding firmly to the prices of the past six months.

Paper Stock Still Lagging

Paper stock lags along in a listless way, the mills showing but little interest in the present supplies. There is very little stock on hand and quotations are holding firmly.

Trade Relations Committees Meet

The paramount issue at the joint meeting of the Trades Relations Committees of The Philadelphia Paper Trade Association and the Typothetae was the question of fees to be charged for the service of the Collection Bureau of the Typothetae and the more efficient operation of this credit division of the master printers organization. At the meeting held last Friday at the Bourse the matter was discussed with Norbert A. Considine as Chairman of the Paper Trades Committee representing the paper men. The question of establishing a fee system for the maintenance of the Collections Bureau of the Typothetae was brought up as a result of the increased failures in the printing industry which involved heavy losses to the paper trade. It was brought out at the joint meeting that this loss might be considerably reduced by more efficient service than is now available if adequate funds could be secured for more rigid and thorough investigations by the Bureau in the collection service. Those resorting to the Bureau in the future may be charged a nominal fee for the advantage of securing the co-operation of the Collection department as result of the discussion. Chairman Considine was assigned to take the matter up with the paper men at the next meeting of the Paper Trade Association to be held this Thursday and to receive the suggestion of the dealers for this service charge. In view of the heavy losses which the paper dealers have been subjected to in the frequent failures of the printing industry within recent months it is almost an assured fact that the paper trade organizations will take favorable action on the proposed fee charges.

David Weber Co. in New Quarters

With the removal of the David Weber Company, this month to its new mammoth building at Richmond and Tioga streets, that Philadelphia corrugated container plant will occupy the largest manufacturing quarters in this section, and taking in an entire city square. The firm, which began the manufacture of containers and folding boxes back in 1893, outgrew its old location at 5th and Locust streets and last year began the construction of the present new home with its 100,000 square feet of space, with all the modern surroundings and appurtenances of a structure devoted to a manufacturing plant. It has been built with the latest improvements of fireproof, brick and concrete building construction and is of the saw tooth type commercial structure with plenty of daylight lighting. It is the intent of the president of the firm David Weber and his associates including his son, I. H. Weber, to increase production to double that of the old quarters, confining manufacture to corrugated containers exclusively.

Shevlin Paper Co. Organized

Harry Shevlin has organized the Shevlin Paper Company, with headquarters at 122 North Franklin street and is now opened for business. The firm will deal in a complete line of coarse papers including wrappings, bags and specialties. It will also deal in twines.

Talks to Printers

Under the direct supervision of the Philadelphia offices the Champion Coated Paper Company, will give an educational talk to the printers and publishers of Baltimore, on November 12. There will be a meeting of the printing crafts especially held for this purpose at the Hotel Emerson when E. Kenneth Hunt, advertising manager of the Champion Company, will lecture on paper making as it is carried out in the mills of the Company with slide pictures to visualize the talk, from the cutting of the timbers in North Carolina, through the pulp mills of the Champion Fibre Company, at Canton, N. C., down to finishing process and shipment of papers. There will be more than 150 printers and publishers of the Oriole City attending. Philadelphia Manager Charles A. Labor, who arranged the meeting will supervise the Baltimore educational campaign.

W. G. Biles Takes Title to Stock Warehouses

Title to the large paper stock warehouses of the firm of Biles & Berman, recently organized to take over the business of the Universal Waste Products Company, in this city, passed to the hands of William G. Biles a member of the firm. The warehouses are located at 1520-1522 Kater street and consist of a four-story

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structure 120 feet long. Included in the transfer of the ownership of the stock warehouses are the buildings located in front of the property consisting of three dwellings facing on Bainbridge street. The Biles & Berman Company, was organized a little over four months ago to take over the Philadelphia business of the Universal Waste Products Company, one of the largest of local stock firms, running 13 barges between here and the New York markets and collecting at all ports along the Delaware. Mr. Biles formerly was manager of the Universal Company and entered into a partnership with Barney Berman for the purpose of acquiring the Quaker City business while the Wilmington and Chester branches were taken over by the Penn Paper and Stock Company. The property was purchased for $18,500.

H. B. English Goes to Canadian Offices

H. B. English for the past several years in charge of the Philadelphia Branch of the Kennedy Car Liner Company, 815 Commonwealth Trust Building, 12th and Chestnut streets, has been transferred to the Canadian plant of the Company at Woodstock, Ontario. He will take over the duties of manager of the Canadian headquarters which is conducted along the same lines as the American plant for the convenience of the Canadian trade. The Kennedy Company produces a complete line of extraordinary sizes in bags such as those used by the auto trade, talking machine, furniture dyeing and cleaning and clothing industries and others using large bags, of this type. No announcement has been made as to who will succeed him in the Philadelphia offices.

Glassine Paper Co. Changes

The Glassine Paper Company, of West Conshohocken, Pa., near Philadelphia, is now producing all its products in its own plant bought recently and has given up the Bridgeport mill which it leased from the Diamond State Fibre Company at the time of its organization last Spring. At the time of transfer of the Glassine paper business of the Diamond State Company to Chester E. Beecher, formerly its superintendent, the latter took over the machine operated by that Company at its Bridgeport Plant as an auxiliary to its West Conshohocken plant devoted to the manufacture of glassines in colors and embossed and plain specialties. The Glassine Department of the Diamond State Company was established several years ago. Recently the Diamond State Company decided to manufacture radio papers and upon the decision of the Conshocken Company to give up the machine at Bridgeport took over its old plant again for the purpose of producing these specialties, and is now running it on its own production for the radio trade. It is the intention of the Diamond State Company to continue the production of radio papers as long as there is a market for these.

Aatell & Jones Removed

With the acquisition of larger quarters the Aatell & Jones Company, formerly located at 2123 Summer street, has been able materially to increase production of its own special brands of towels, toilets, cups, napkins, doilies, tray covers and allied products and to add a large printing department. The firm has taken the three story structure at 2123 Cherry street where it will wrap and label its own brands and those specially printed for other concerns. The installation of a large printing plant with several presses and labeling equipment will facilitate the manufacture of private brands and the printing of trade marks for the consumer for advertising purposes. The firm also produces soda fountain specialties with imprints for the dealers.

Paper Dealers Lose in Dando Failure

Among the heaviest creditors involved in the failure of the Dando Printing and Publishing Company of this city were firms furnishing that concern paper. The paper dealers who have claims against the company are involved to the extent of more than $18,888 while the banks have $15,00. This printing and advertising concern was one of the oldest in this city and had an established reputation as a going concern. Its failure was due to the heavy overhead it was obliged to maintain. The printing and the advertising business, which heretofore were combined have been segregated and will be operated as two separate businesses and it is expected that under the management of the receivers in the bankruptcy proceedings that the debts will eventually be paid in full and the paper men will not be obliged to sustain the heavy loss now involved in their claims.

Traffic Manager of the A. P. W. Co. Visits Port

Among the visitors to the Philadelphia trade during the week was D. C. Kibbey, Traffic Manager of the A. P. W. Paper Company, of Albany, N. Y. who came here to supervise the shipment of a cargo of pulp which arrived here from Halifax late Sunday and the first to have been shipped from Halifax for Philadelphia ports in many months.

St. Regis Starts New Machine at Deferiet

DEFERIET, N. Y., November 9, 1925.—The new 156 inch Bagley & Sewell Fourdrinier at the plant of the St. Regis Paper Company was started last week. The work of installation was not begun until the latter part of June and was completed in an unusually short space of time. The machine, which will run at a speed of 1000 feet per minute, is equipped with all the most up-to-date improvements, including General Electric undivided driver, Briner economizer system, etc.

The machine will have a capacity of approximately 75 tons of paper per day and when it was started last week work was immediately begun on the production of the St. Regis company's big order for telephone book paper for the American Telegraph and Telephone company. This order is a big one and will take several weeks to fill. The new machine was gotten partly for this order.

This new machine, in the line of the St. Regis general progressiveness, follows closely upon the completion of the new pulp mill which has just been declared ready for full action. The new pulp mill as it stands is one of the biggest and best in the paper making industry. Housed in the new brick, steel girdered building are 28 pulp grinders, steaming, spitting machines that convert fine logs into wet, flowing pulp. These machines are divided into seven units of four machines each and each unit is operated by a 2,000 horse power General Electric motor. The pulp mill turns out about 250 tons of pulp a day.

The company plans within the next few days to complete the finer points of the building, cleaning up the remaining debris of construction and installing shower baths and lockers in one end of the building.

The old building which formerly housed the St. Regis pulp mill has been taken over, along with the property it covers, by the Power Corporation of New York, for a power development.

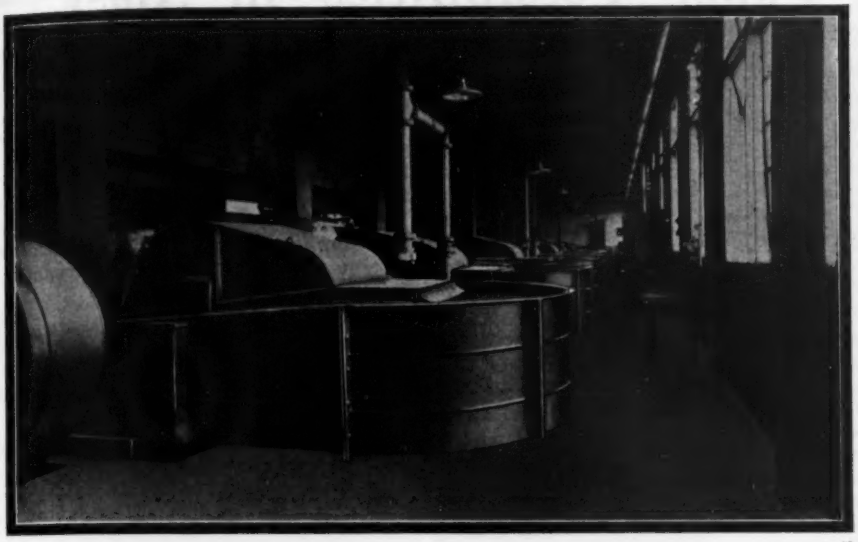
Dine Strathmore Paper Mill Officials

SPRINGFIELD, Mass., November 9, 1925.—The 20th annual dinner and dance given by Horace A. Moses to his official force, heads of mill departments and honor guests, who have served the Strathmore Paper Company for 25 years or more, was held Saturday night at the Kimball. There were nine more honor guests than a year ago.

To Represent Peshtigo Paper Co

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 9, 1925.—A change was announced recently in the sales force of the Peshtigo Paper Company, Peshtigo, Wis. J. A. Lemnon, formerly with the American Writing Paper Company, has been engaged as Peshtigo representative in Chicago and eastern territory. R. C. Swan will represent the company in Chicago and the west.



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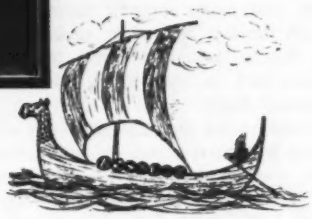
Phillipsdale



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Pulp and Paper Possibilities in Alaska

By Charles R. Berry

The following article was written by Charles R. Berry and was printed in a recent issue of the Alaska Weekly, Seattle, Wash.—Mr. Berry is keenly interested in the development of the paper and pulp resources of Alaska, and is concerned in the Alaska Paper Mills, a proposed project in the Thorn Arm section of the territory. Mr. Berry will be remembered as the author of other interesting articles on the pulpwood resources of Alaska that have appeared in the Paper Trade Journal.

There has been considerable misconception regarding the pulp timber of Alaska and its potential value for paper manufacture and as a consequence, many discouraging reports have been broadcasted to the paper consuming trade and relayed therefrom to the investing public. All this in spite of the intelligent and untiring efforts of the United States Bureau of Forestry officials to impress upon paper manufacturers and paper users the genuine commercial value of this great storehouse of raw material.

In the past many sporadic attempts have been made to exploit and develop the paper making industry in southeastern Alaska, but to date, aside from a small amount of pulp produced at a mill on Steel River Inlet, near Juneau, these efforts have proved futile.

Many and varied reasons have been offered in justification of permitting the finest stand of pulp timber on earth to fall into decay, over-matured and ever increasing the expense of logging it. "Wait another ten—twenty—thirty years" "too mountainous to log"; "timber is wind shaken, too limby, sapstained"; "labor is too costly, too hard to get in Alaska"; and the cap sheaf of all alibis, "it is so far away from consuming centers, too great in cost to transport." And just why there has been no coherent effort put forth by Alaskan proponents of an immediate utilization of the Tongass and Chugach National Forests' timbers to combat these falsities is indeed hard to reconcile, since of the three lines of industrial endeavor in Alaska—mining, fishing and paper making, the latter possess by far the most substantial future.

What Federal Engineers Say

To quote from a recent report of the Federal Power Commission engineers, "The principal industries of southeastern Alaska are salmon fishing and mining, both of which use considerable power. The mining industry is very uncertain, varying greatly from year to year, according to the quality and quantity of mineral found. The fishing industry appears to have passed its peak; and unless adequate steps are taken to regulate the animal catch and increase the propagation of salmon through the hatchery method, the industry will soon be of much less importance than at present.

"There are other industries, such as fur farming, but none of these is sufficiently extensive to furnish the foundation and support for a stable and growing population. The only possible line of expansion appears to be in the development of the manufacture of pulp and paper. The potential value of this resource is tremendous. It is only a question of time when the shortage of newsprint stock in the United States and Canada will compel the manufacturers to go to southeastern Alaska for their pulp timber. This industry will then develop on a large scale. Recent surveys show that the forest service's early rough estimate of 70,000,000,000 feet, board measure, as the amount of standing timber in the Tongass National Forest is conservative. With large timber supplies that can be made to produce possibly 2,000,000 cords of pulp wood annually on a sustained yield basis, or roughly, 5,000 tons of paper a day, with thousands of miles of sheltered inland waterways that favor economical logging and transportation, and with large resources of water power that can be developed at a relatively low unit cost, the prospects for a rapid and substantial growth of this new industry in southeastern Alaska are bright indeed."

One can hardly blame these particular engineers for departing from the customary dry technicalities of the profession and transcribing such a panegyric as this, after one has actually had an intimate and personal introduction to these wonderful forests of Alaska. And to do it, the writer advises not to wear a furlined parka, either, for in summer or winter, underneath the rain-proof garments, the least worn the more comfort. Indeed, the climate is more tropical than arctic!

Stand of 150,000,000 Feet

Since the last general and rather superficial cruise of the Tongass National Forest timber, giving about 77,000,000,000 feet, b. m., a recheck shows a probably stand of 150,000,000,000 feet at least; (the writer believes there is 150,000,000,000 feet at least in the two Alaskan national forests areas—all suitable for wood pulp timber). Over two hundred million cords of mechanical wood pulp timber stands awaiting the verdict of paper manufacturing capital—literally falling over itself as a result of the ignorance of capital to put it to a much needed use.

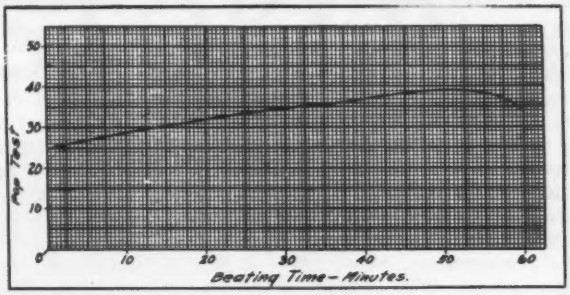
A short while back an offering of $50,000,000 of eight per cent bonds of a very small European monarchy was subscribed for in fifteen minutes after being placed on the market, while our own great rich treasure house, Alaska, is expected to lift itself off the ground by its boot straps! The far greater profits in this instance should furnish a most conclusive reason why it would be just common good sense to develop Alaska in preference to Poland, or Belgium, or Jugo-Slavia.

The 200,000,000 cords, more or less, of hemlock and spruce in the Tongass and Chugach National Forests is primarily and best adapted to utilization as newsprint paper. It lends itself ideally to the ground wood method, both as to proportion and quality. The Sitka spruce in these forests runs practically fifty per cent clear in the lumber grades, is sappy but not pitchy; trees average three feet and over in diameter and 175 feet in height to tops; there are but few trunk branches. The hemlock is a superior grade of western Hemlock, practically 100 per cent sound and less than one per cent wind shaken; its specific gravity is greater than that of hemlock in the states or Canada. It requires no bleaching, owing to its unusual whiteness, is of a good texture and promises to surpass other hemlocks for newsprint manufacture. Both of these Alaska woods are noted for their unusually long fiber.

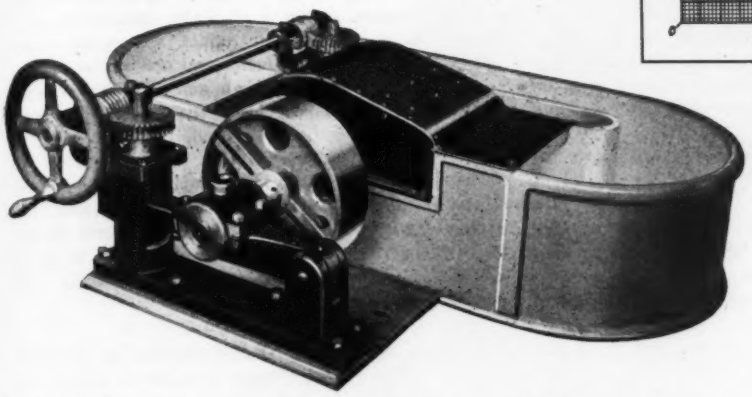
General Run of the Forest

The general run of the forest is estimated as follows: hemlock, 65 per cent; spruce 20 per cent; cedar, 10 per cent; alder, cottonwood, birch, etc., 5 per cent Over the entire forest area the merchantable timber cruises about 20,000 feet, b. m., to the acre. Deducting rocky plateaus, muskegs, mountain tops and other bare areas, the forested areas cruise approximately 50,000 feet, b. m., per acre.

This timber is of unusual rapid growth; and for identical reasons its deterioration is as rapid. A seedling spruce or hemlock will attain its maximum size in from forty to fifty years under favorable conditions. The principal factors, attributing to this condition are moisture and temperature. The average annual precipitation of from 90 inches in some of the northerly parts of the Tongass forest to 156 inches in the center of the rain belt, does not indicate any Sahara-like conditions. Only about five per cent of this precipitation represents snowfall. Such moist conditions, accompanied by continuous humidity, would not be expected to produce stunted forest growth.



The above graph shows an actual strength development curve as it varies with the beating time. Note that a point of maximum strength is reached beyond which beating is not only useless but actually destructive.



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Different pulps have different rates of hydration and it is important in purchasing pulp to know the rate at which its strength will develop under certain beating conditions. Moisture content in the stock itself has an important bearing on beating time and strength development.

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But, as stated, the decay of the forest under these almost abnormal conditions, is almost if not, as rapid as its growth. This the forest service is fully alive to. Is it a sane conservation policy, therefore, that will lock up this great resource and let it go back to the earth from which it sprung, unused? We might as well add to the appalling list of wastes such as forest fires, carelessness in cutting, in manufacturing, etc., that of decay, for practically one-fortieth of this 150,000,000,000 feet of fine timber is falling into decay each year! If this is conservation, it is a rare bird indeed. But there is hope. The Federal power commission, in intelligent cooperation with the Bureau of Forestry, whose policy with respect to the development of national forests of Alaska is now and always has been most commendatory, have evolved a plan that commands the respect of all. With each power site or group of power sites in the Tongass and Chugach forests there is allocated an area of timber adjacent to them sufficient to supply the proposed pulp and paper mill with its raw material perpetually. That is, a 500 ton a day mill would have segregated for its use, stumpage enough to last until reforestation had taken place on that first cut over, or substantially 175,000 cords per year. It is no one-man affair to fall, swamp, buck into log lengths, yard, haul, ross, buck, again into short lengths, grind, wash, beat, doctor, agitate, convert into paper on the Fourdrinier, trim, wrap and put into the warehouse ready for shipment to the big metropolitan dailies such an amount of timber, but the army of laborers required find it mighty interesting occupation at that end and capital finds it mighty profitable, too.

Little Danger From Fire

Alaska's forest growth stands in little or no danger of destruction by fire. The annual precipitation is indubitable proof of that, particularly when it is realized this moisture is pretty evenly distributed over the year. This year as in other years, thousands of acres of fine timber land in regions less favored are being run over by the fire "devil." All the exhaustive steps taken to prevent the appalling fire loss in the United States and Canada seem not to avail. The individual grows wanton and careless in increasing ratio to the preventative methods put in practice. It may end with the complete eradication of our magnificent forests, but it should not. Decay is the avenue of waste in Alaska's forests. And who can say but that this is not as condemnatory? Moth and rust, fire and decay. While fire, preventable or unpreventable, is consuming millions of feet of timber in the United States and Canada, decay, easily preventable, is consuming nearly four billion feet of timber annually in Alaska. All because our capital must go over to Poland, to Belgium, to Jugo-Slavia, to develop those countries. The creator of the phrase "Seward's Folly," was not such a slow wit at that, in view of the almost criminal disregard of the situation in this day of enlightened grace.

Little Known of Alaska's Timber Resources

Very little is known of the timber resources of Alaska and even less appreciated, except by a few who are a veritable "voice of the wilderness." Frequently engineers approach Alaska with the intention of making investigations and reconnaissance surveys as representatives of companies who generally would rather see Alaska's timber stand, or fall into decay, for ten or twenty years yet, howbeit the consumer of paper would not, as a matter of fact. The "investigations" of these engineers are generally confined to a short walk along the tidewater, or where the trout or salmon are biting good. Alaskan forest investigations are necessarily discouraging as conducted via the beaches and the embryo of many a promising Alaskan timber enterprise has met its undeserved fate thereby and lies tucked away in some dusty pigeon hole because of this kind of "investigation." Like all worthwhile things in life, the best is most difficult to get at and the timber of Alaska is no exception. It lies back from the tide-water, very short distances sometimes, but far enough it seems to furnish a good excuse for ye engineer to write his report negatively on the beach.

As stated before, reforestation is most rapid in the moist, humid climate covering the Alaskan national forest districts. Nature here requires no assistance in making two trees grow where one grew before. Qualified of course by the fact that nature asserts her corrective principle and one of these is eventually crowded out. Scientific reforestation would be unnecessary here—an absurdity, in fact. Scientific reforestation may be economically sound in some instances, but the writer, after a life time spent among forest growth and always interested in watching things grow, feels that what nature has passed up as not worthy of attempting reproduction, is not a profitable undertaking for science to tackle. As an assistance to nature, science may give invaluable aid. As a preventative factor, science can and does save the day for nature more often than not. The writer was recently criticized for a statement made in an article written by him and published in a technical journal, the critic being a prominent forest engineer whose efforts at working out reforestation methods have been most commendable, and the writer has a great deal of respect for his position; but to quote him in part, he states: "it is folly for us to allow nature to go ahead and reforest an acre of ground, taking 70 years to do it and produce one cord of pulp wood" (or substantially this phraseology).

What Science Can Do

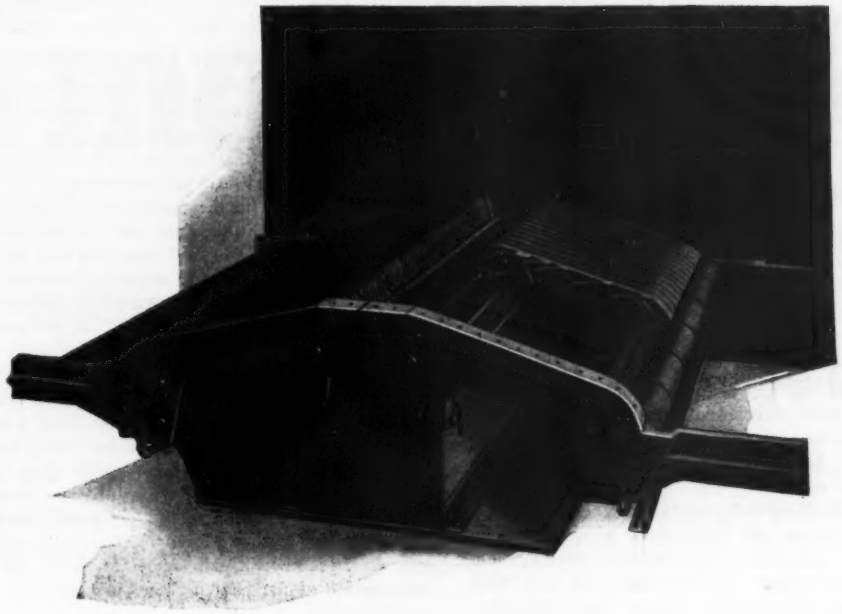
I am in full agreement with this talented engineer but will add that if science can produce twenty times as much as nature can in 70 years, it is equally as foolish. For twenty cords of pulp wood per acre against the cost of planting and caring for over the 70 year period would leave a monumental deficit, indeed, and no one has ever heard of a normal instance where scientific replanting can outdo nature twenty to one. If such as this particular instance actually existed, it would prove to the writer that nature knew enough to let such an unpromising spot remain barren. There are enough promising spots on the North American continent for ideal reforestation, and science has a big job on its hand to keep fire from eating the life and substance out of the soil that nature may have the necessary encouragement and protection to reforest efficiently. However, in respect to Alaskan forests, no controversy exists as to natural or scientific reforestation, for there the elements, the climate and the topography of the land all combine to aid nature and as soon as a space in the forest is cleared off and the light allowed to penetrate to the ground, innumerable seedlings at once spring up, jostling one another for position until the inevitable rule of the survival of the fittest determines the final new forest.

Not only are forest conditions ideal for the manufacture of pulp and paper in southeastern Alaska, but this condition is surrounded by others as ideal. Take water power. Even the layman is cognizant of the importance of water power in connection with the manufacture of paper. Possibly nowhere else on earth does forest and hydroelectric power blend so ideally as in Alaska. Here are to be found power sites ranging from 1,000 horse power to 25,000 horsepower, generally located at or very near the tidewater and practically surrounded by dense forests of hemlock and spruce. For the most part they can be developed at a relatively low cost, a safe average being not over $75 per horse power. Of unusually high static heads, which may be increased by retaining dams to create greater storage, the natural advantages all combine to make great economies in cost of construction of dams, tunnels, etc., by reason of the fact that most of the streams "break through" from their natural reservoirs and course along narrow canyons disemboguing into the various inlets, bays and arms of the ocean.

No Serious Flood Conditions

These streams are, generally speaking, fairly constant in their annual run-off. The government has installed gage stations and

TYPE "E" STOKER



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Type "E" Stokers are giving thoroughly dependable and highly efficient service in every branch of industry—especially in Pulp and Paper plants.

They burn a wide range of bituminous coals and various refuse fuels economically.

They can be operated continuously at a heavy overload.

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measuring apparatus in most of the streams suitable for water power sites and these records have been kept for the past few years. These records show few instances where there were any serious flood conditions, although the glacial-fed streams in the more northerly portion of the Tongass and throughout the Chugach forests there is a greater variation in the annual run-off than in the south where the rainfall is greater and where muskegs surround the natural reservoirs and let out the moisture much as a sponge exudes moisture after reaching its maximum of absorption. Melting snows also act substantially the same and while there are no very high mountain peaks in the forests, the snow just about disappears as the new fall commences, thus releasing moisture pretty much over the year.

The Bureau of Forestry officials have evolved a scientifically balanced arrangement between the water power sites and the pulp timber in Tongass National forest. Since is requires about 8,000 horsepower to manufacture 100 tons of paper by the ground wood method, to a power site of about 16,000 h. p. at 80 per cent efficiency, an area of timber is set aside, substantially 5,000,000 cords in this instance, where the government would specify that a 200 ton daily capacity plant should be built. This insures for this project a 70 year timber supply, practically double the period necessary for reforestation to take place.

Much Unfounded Criticism

Much criticism has been directed at the bulwark of conditions that flank the purchase of stumpage from the federal government in the Alaskan national forest areas. And capital, ever ready to flee at the cry of "wolf! wolf!" complains that at any time some new (and foolish) congress may boost the stumpage prices beyond all reason and leave them with millions invested at the mercy of impossible rates for raw material. This is crass hysteria with absolutely no foundation for fear whatever. From a very close and careful study of the entire structural act empowering sales of stumpage and the fixing of rates therefor, the writer cannot see where it is even possible for the purchaser to be wronged, or his investment even jeopardizing.

The stumpage rate for pulp timber is established for a period of five years. At the present, according to a sample prospectus of a timber sale in the Tongass forest in the writer's possession, the minimum price for hemlock and spruce is 30 and 60 cents respectively, per cord of 100 cubic feet. At the expiration of the five year period the government may readjust this rate by a reappraisal of the timber, but cannot any more than double it. But if the rate is increased at all, the purchaser has the right of protest and can he show that he is unable to enjoy a reasonable profit from operating under the increased stumpage rate, the government then agrees to readjust such rate and it follows as a matter of course that the government would credit the purchaser with such amounts as he has paid under such "unreasonable" readjusted rates. And that's that, and capital may come up to the feed box with perfect safety; the dog in the manger will be found to be our own good and amiable Uncle Sam, as indulgent as ever, still out for the good of all, even to that far-off, ice-bound territory—Alaska.

Labor Not Difficult to Obtain

It is not at all uncommon to read of how difficult it is to man an industry in Alaska. That all labor must be secured through contractors and is not at all dependable, is illiterate, unskilled, restless. It is a dour picture, indeed, that enemies of Alaska's progress would and do paint upon canvas, flash upon screen and broadcast through printed words. No! Labor is not difficult to obtain and hold in Alaska. Any reasonable number of skilled and unskilled workmen may be recruited within one month's time. The cost of such labor is parallel at all times with that of labor in the States, but in addition to this with special emphasis on the pulp and paper making industry, the Alaskan native stands as the chief labor solver of the territory. He is skilled in two crafts, fishing and woodworking. He is a patient workman, industrious if not allowed to drift without leadership, and he never strikes. The writer has in his possession a letter from an Alaskan native friend, who promises to supply a proposed paper mill project with 750 natives skilled in woodcraft within 30 days' time. These natives are of the Tsimpsianm Thlinget and Hydah tribes, and known to the writer as very capable and trustworthy workmen, some highly skilled in all lines of woodworking. While they are intelligent enough to know what their services are worth, they simply ask a reasonable wage, such as their white brothers under similar conditions would receive.

Are We Never to Progress?

Now, some of Alaska's pusillanimous friends want this northmost possession to remain solely a recreation ground, a Mecca for tourists. A most noble motive to be sure, but sixty years ago, Alaska's friends of that day held a far more practical view of its usefulness than that! Are we never to progress? Thousands have ecstatically attested to the marvels of Alaska's wonderful scenery this present year as in the years past; thousands more have panned its creek and riber beds, and mined its rich treasure of gold and silver and copper; thousands more are gathering in by trolling line, by seine, by trap, its silver horde of salmon and halibut and herring, but the greatest resource of all, the one that the eye may behold, the one resource wherein there need be no guesswork, no imagination as to its substantiality, stands untouched.

The paper industry is greater than mining because minerals are hidden; greater than fishing, for fish have a habit of forsaking their old and former haunts and never return again in great numbers. The forest resources are Alaska's great hope. Far sighted men in government service have spent years in working out a comprehensive plan of utilizing this practically inexhaustible stand of timber and it is being offered to those with capital virtually as a gift. Here is enough pulp timber to supply the entire news print consumption of the United States in perpetuity. Hard to believe, but it's there!

Just one more point, a misstatement that should be capped. Inaccessible! That word has hung up not a few promising enterprises seeking to develop Alaska's timber into pulp and paper. The Tongass Forest pulp timber is on tide water, thus far more accessible than is the hinterland of Canada, where it must be transported over rails to the large consuming centers on the Atlantic seaboard. Seattle, a great distributing center now, is destined to be one of the greatest on earth and the Tongass Forest is but an average of 750 miles from Seattle. But an all-water borne cargo of news print paper can be carried from southeastern Alaska at no greater cost via the Panama canal to New York than the same material can be shipped to this latter port from northern Ontario or northern Quebec. This is something for the harassed paper mill men of the east to think over.

Will Do Job Right in the Territory

Alaska is determined to do the job right in the territory, from soup to nuts. There is not much encouragement held out for interests who would ship out its raw materials, its manufactured timber in particular. Paper can and will be made in Alaska, by Alaska workmen. Thanks to the bureau of forestry officials they are practically insisting on that program. Alaska must be developed industrially to take her rightful place in the sun, become a fact, one of the stars in our republic firmament. Industrial expansion means increase in population and this cannot be accomplished by shipping out the raw material to be manufactured elsewhere. Each year for the past ten years there has been a steady decrease in the white population in Alaska, due principally to the lack of industrial expansion on home soil. The paper making industry must and will call a halt to this attrition of both its resources and its population.

Alaska should have the attention of capital before Poland and Belgium and Jugo-Slavia, because the United States greatly needs the paper product that Alaska possesses. A half billion of American dollars put to the development of the paper industry in Alaska would in ten years bring back a return in excess of four billion.

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The testimony of actual users— TELLS THE STORY

With 16 new Beloit Fourdriniers in continuous operation, several for four years or more, some remarkable testimony on papermaking efficiency is presented. Read these enthusiastic extracts from unsolicited letters received by us:

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"We are running steadily—due, most of all, to the running quality of the splendid machine furnished by you. We are proud of our 'Beloit' machine."

1000 Feet per Minute
"We are running steadily and making high-grade paper at one thousand feet per minute. We are proud of our 'Beloit' machine."

From the Coast
"It is generally conceded by all the best paper mill men on the Coast here that our Beloit machine is by far superior to any paper machine on the coast."

Record Production
"We certainly want to congratulate you on this production. This is, as far as the writer knows, a record production for a high-speed news machine."

Best He Has Seen
"The fourdrinier end of the machine is about the best-looking proposition the writer has ever seen. You have made a great many improvements over anything we are used to seeing."

Smooth Running
"I had the pleasure of seeing your machine in operation. Words fail me in which to express my admiration at such a smooth-running machine."

Exceeded Our Fondest Hopes
"After two years of operation the average life of our wires is about 3½ months, which proves that all the improvements on our machine, i.e., oscillating suction boxes, removable Fourdrinier, arrangement of wire rolls, etc., together with excellent workmanship, gives results which exceed our fondest hopes."

Record as a Money-Earner
"——— holds the best record as a money-earner of any machine in the United States on like products—which has been justified by the judgment of some of the best men in the country."

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Trade Marks Department

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The following are trade-mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

MARABOU—No. 208,200. Wilhelm Koreska, Vienna, Austria. For carbon papers and typewriting ribbons.

PEACOCK—No. 219,267. Bermingham & Prosser Company, Kalamazoo, Mich. For book and printing papers.

DRI-PAC—No. 219,498. Frank G. Shattuck Company, Boston, Mass. For ice cream containers of paper.

SHEEPSKIN—No. 219,959. Graham Paper Company, St. Louis, Mo. For wrapping paper.

RE-PE-TO—No. 219,755. Modern Office Devices, Inc., New York City. For binders or files.

BAPACO—No. 220,590. Walter W. Bailey, New York. For book paper, label paper, lithographing paper, and bond paper.

SATISFOLD—No. 220,589. Walter W. Bailey, New York City. For book paper.

ANTEX—No. 220,283. Angier Corporation, Framingham, Mass. For creped or crinkled paper stock.

LIFE GUARD—No. 219,706. Wyoming Valley Paper Mill, New York. For toilet paper and paper towels.

STRATHLAID—No. 219,614. Strathmore Paper Company, Mitineague, Mass. For book paper.

KUT-MONT—No. 219,358. William S. Tuttle, Rutland, Vt. For typewriter paper.

Sisalkraft— No. 216,810. American Reinforced Paper Company, Attleboro, Mass. For reenforced paper used as a building or sheathing paper.

BEARGRASS—No. 216,706. Ballard & Ballard Company, Louisville, Ky. For paper sacks.

WISCONSIN MILL IMPROVEMENTS

(*Continued from page 26*)

imously voted authority to the Consolidated Water Power and Paper Company to lay an 18-inch water main along three streets in Stevens Point from the Plover River to its paper mill near the Wisconsin River.

It was explained by W. F. Thiele, engineer for the Consolidated, that it was the company's intention to building a modern pumping station in the Plover basin and to use the water in the paper manufacturing process. Until now it has been using water from the Wisconsin River with the result that the paper has not been of the desired color. It had an option of putting in settling tanks and purifying the water with chemicals, or making use of the pure water supply from the Plover basin.

The better water will mean a higher grade of paper, will increase the activities and opportunity of the mill and, in the opinion of Aldermen Leo Gurney and Michael Donermeyer, both of whom are Consolidated company employees, will mean eventual enlargement of the plant. The mill is now engaged largely in making butter wrappers.

The water commission had no objection to the project as it will in no way interfere with the city water supply from the same river.

Mr. Thiele said that a crew of men will be put to work at once and the work will be rushed this fall. Over two miles of main will be put in.

Superior Paper Co.'s Expansion Plans

Operation of the new Lake Superior Paper Company, Ashland, a subsidiary of the Menasha Printing and Carton Company, Menasha, at full blast by January 1, 1926, will only be the first step in steady expansion which will cover a period of years, it was learned after a conference at Ashland between E. A. Meyer, vice-president, F. A. Beisel, general superintendent, and John I. Meyer, superintendent of the Menasha mill, with Rudolph Meyer manager of the Ashland plant.

One machine, which has just commenced operations, is running 24 hours a day, with three shifts of employees. This machine is making napkin paper, which is cut down to size, ready to use, wrapped and shipped. It is being turned out at the rate of six tons a day.

The other machine is now being completely overhauled with thousands of dollars of new parts, and it is believed that this machine will be running by the first of the year. The present plan is for the new machine to make paper for bread wrappers, which will be shipped to Menasha and printed in the huge printing establishment of the concern there.

The Menasha concern has only the Ashland paper mill and a smaller one at Menasha to supply its needs, and with the growth of the concern, the Ashland mill will be called upon for greater output.

When the two machines are running January 1, an investment in Ashland of over $100,000 will be represented.

Paperboard Industries To Meet

The next meeting of the Paperboard Industries Association, which is the first meeting since the Association was organized in Chicago on September 11, will be held on the Roof Garden of the Waldorf Astoria Hotel, New York City, on Wednesday, November 18 and Thursday, November 19.

Meetings of the Folding Box Group, Paperboard Group and Container Group will be held on Wednesday, November 18, in accordance with the following schedule:

10:00 A. M. to
12:00 Noon .....Folding Box Group

1:00 P. M. to
3:00 P. M. .....Paperboard Group

3:00 P. M. to
5:00 P. M. .....Container Group

The general meeting of all members of the three groups is scheduled to come to order at 9:30 A. M. sharp, Thursday, November 19. President Fletcher M. Durbin will preside at the general meeting.

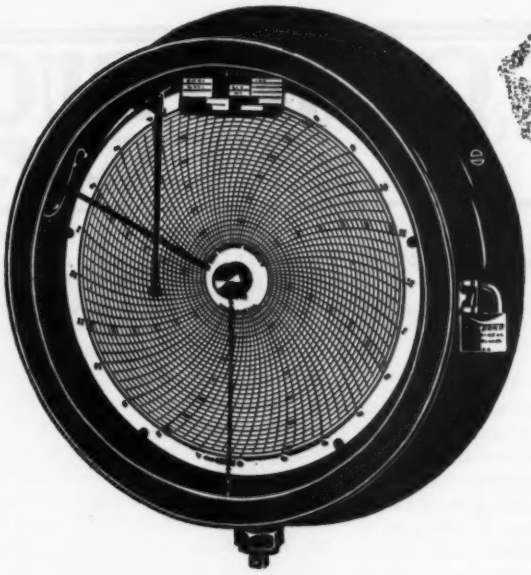
Interesting programs have been prepared for the meetings of the several groups, as well as for the general meeting. Vice-President Walter P. Paepcke will preside at the meeting of the Paperboard Group; Vice-President J. P. Brunt at the meeting of the Container Group, while President Durbin will act as Chairman of the meeting of the Folding Box Group, in the absence of Vice-President Arthur C. Osborn. A luncheon will be served at noon Thursday, November 19.

During the past few days, a number of additional applications for membership have been received, which will be considered at the November meeting. It is quite probable that a very large number of new members will be elected at that time. Some of these applications have been made by large factors in the paperboard, container and folding industries, some of which were not heretofore identified with any one of the former associations.

Honors for Col. B. A. Franklin

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., November 2, 1925—Things are coming fast for Col. B. A. Franklin of the Strathmore Paper Company. On October 20 he was elected Vice President of the Associated Industries of Massachusetts at Boston. On the 29th he was elected Second Vice President of the National Council of the Young Men's Christian Association held at Washington.



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The Saving–$26,000.00

Does Instrument Control of power plant temperatures and pressures bring about any coal economies?

The cost of Foxboro Instruments installed by a certain manufacturer, including maintenance, amounted to less than half of one per cent of his average annual fuel bill.

Resultant economies saved $26,000.00 the first year.

Perhaps you will be as surprised to learn, as was this manufacturer, how infinitesimal is the cost of Foxboro Instruments in comparison to the major cost of coal—how small is their cost in comparison with the savings they make possible.

The high quality, the guaranteed accuracy, the dependability of Foxboro Instruments for indicating, recording and controlling temperature and pressures is undisputed by conservative purchasers of power plant equipment. Write for Bulletin 96-1.

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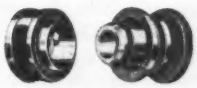
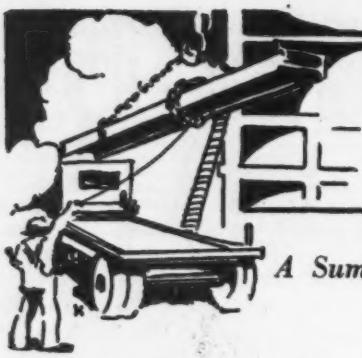


The New Chart Holder, Code No. 3-A is the latest improvement in chart retention and is an exclusive Foxboro feature.

The chart slips into true center, is held securely and yet a twist of the tension head turns the chart to the correct time adjustment. Interchangeable with present chart holders.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

New Castle, Pa.—A new organization has acquired control of the New Castle Paper Mill Company, which has been idle for about a year past, and plans are under way to reopen the mill at an early date. Enlargements and improvements will be made, including the replacement of certain equipment and installation of additional machinery. It is expected to resume production early in the coming year. The new company, it is understood, will be known as the New Castle Paper Products Company, lately formed under Delaware laws with a capital of $103,000.

Buffalo, N. Y.—F. M. Rich, 94 Parkwood avenue, Kenmore, N. Y., and associates are considering plans for the construction of a new local plant on Chenango Street for the manufacture of paper stencils and kindred specialties. It will cost close to $30,000, with equipment.

Elizabeth, La.—The Calcasieu Sulphate Paper Company, Inc., lately formed to take over and expand the local mill of the Calcasieu Manufacturing Company, will soon proceed with proposed enlargements. New machinery will be installed to develop a total output of about 35 tons per day of kraft papers, with equipment to include digesters, diffusers and auxiliary apparatus. The work is estimated to cost close to $275,000. Contracts have been let for machinery. R. M. Hallowell is president.

Los Angeles, Cal.—The Los Angeles Paper and Manufacturing Company, 1630 North San Pablo Street, has filed plans for the erection of a new one-story addition, 50 x 100 feet, to be used primarily for storage and distributing service. Noice & Merrill are engineers.

Holyoke, Mass.—The Parsons Paper Company has been making improvements in its plant and has recently completed the installation of a new 84-in. Fourdrinier machine, to be supplemented with other machinery for increased output. The new machine is one of a battery of two such units and a 98-inch machine; it will replace a 68-inch machine, heretofore in service at the mill. All of the new equipment will be electrically operated.

Wilmington, Del.—The Jessup & Moore Paper Company, Commercial Trust Building, Philadelphia, Pa., is arranging for extensions and improvements in its Augustine mills in this section. The program will include the erection of new buildings to cost close to $200,000, and the installation of additional machinery to represent an investment of about $250,000, in addition. It is purposed to begin work at an early date, and to have completed next summer. The capacity will be considerably increased.

Appleton, Wis.—The Fox River Paper Company has awarded a general contract to C. R. Meyer & Sons, 50 State Street, Oshkosh, Wis., for the erection of a new one-story addition, 80 x 105 feet. It will be equipped in part as a filter house, the remainder being given over to a machine shop for equipment repairs at the mill. The structure will cost about $55,000. E. L. Small is chief engineer, in charge.

Longview, Wash.—The Crown-Willamette Paper Company, 248 Battery Street, San Francisco, Cal., and Pittock Block, Portland, Ore., has plans nearing completion for the erection of a new local pulp mill, to be used for the conversion of fir lumber waste to chips for kraft paper pulp. The cost is estimated in excess of $75,000. As recently announced, the company will begin the construction of a new kraft paper mill at Camas, Wash., and the output of the pulp plant will be utilized at this property. The Camas will represent an investment of close to $1,000,000.

Tonawanda, N. Y.—The Rand-Kardex Company, operating a local plant for the manufacture of card and paper filing systems for office and industrial service, has acquired a controlling interest in the Library Bureau, Inc., Cambridge, Mass., manufacturer of kindred paper specialties and equipment. A new company is being formed with a capital of $25,000,000, to be known as the Rand-Kardex Bureau, Inc., to take over and consolidate both organizations. Plans are under way for general expansion in production facilities; the Library Bureau has been operating mills at Ilion, N. Y., Chicago, Ill., New Orleans, La., and other places, and these will be continued in service. James R. Rand, Jr., is president of the consolidated company. The company's Canadian interest, known as the Rand-Kardex Co. of Canada, Ltd., has established a new mill at Niagara Falls, Ont., and has plans under advisement for the installation of additional machinery in the near future.

Terre Haute, Ind.—The Terre Haute Paper Company, 19th Street, has awarded a general contract to the North-Raffin Construction Company, Indiana Theater Building, Terre Haute, for the erection of a three-story addition to its plant, 46 x 100 ft., estimated to cost $67,000. Work will be placed under way at an early date. W. C. Clark is general manager.

Cap Rouge, Que.—The St. Regis Paper Company, Montreal, Que., has acquired a tract of local property to be used for the construction of new pulp and paper mills. Plans will be prepared at an early date for several units, with work on foundations and superstructures to begin early in the spring. The entire project will cost close to $3,000,000, including machinery.

New Companies

Boston, Mass.—The Colonial Wall Paper Company has been incorporated with a capital of $50,000, to manufacture and deal in wall paper products. Coleman Sibert, 62 Pleasant street, Brookline, Mass., is president and treasurer.

Brooklyn, N. Y.—The Eagle Package Company has been incorporated with a capital of 200 shares of stock, no par value, to manufacture paper boxes, etc. The incorporators are R. Hammel, M. Greenberg and H. H. Hunter. The company is represented by Max Miller, 220 Fifth avenue, New York.

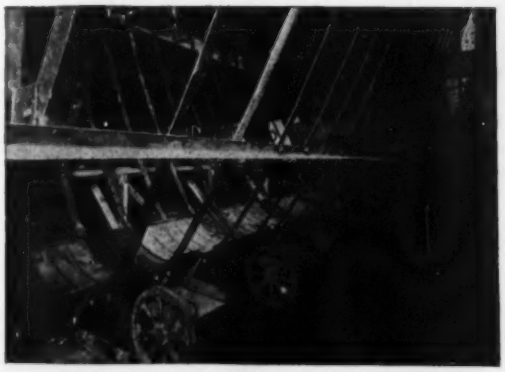
New Haven, Conn.—The New England Bag and Paper Company has been incorporated with a caupital of $50,000, to manufacture and deal in paper goods. The incorporators are Abraham Rubin, Human and Munsey Still, all of New Haven.

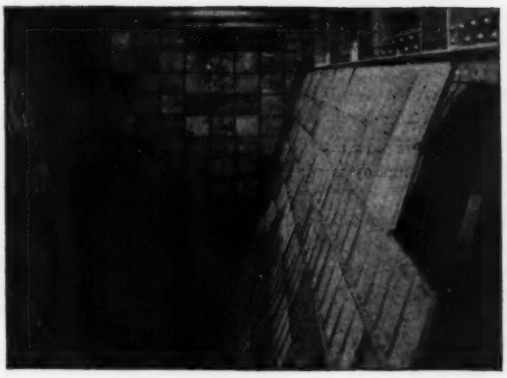
Newark, N. J.—The Uneeda Manufacturing Company, 50 Huntington Terrace, has filed notice of organization to manufacture carbon papers and kindred products. M. Shaffer heads the company.

New York, N. Y.—Charles A. Mastronardi, Inc., has been

(Continued on page 42)

What a newspaper reporter learned about A-S-H Coal Bunkers





The new catenary section bunker, Mr. Yawger said, is the first to be installed in this city and the Rochester Gas & Electric Corporation is the first public utility corporation to use one. It is made of cast iron, Mr. Yawger explained, because that metal, better than any other known, withstands the chemical action of coal. There is a certain amount of sulphur in coal, he said, which will eat into steel or other metals ordinarily used for containers.

The new bunker, now being installed, is made of cast iron plates that overlap each other like shingles so that its sides are semi-flexible and will change with the load inside distributing the stress and strain. It will be sixty feet long, seventeen and a half feet wide at the top and twenty feet deep. It is, in cross section, the shape of half an oval.

11-2-25

A reporter on the Rochester (New York) Democrat and Chronicle sought "real news" about the new Lawn Street Station of the Rochester Gas and Electric Corporation and accordingly obtained an interview with Mr. Thomas Yawger, General Supt. of the company.

The "news" in this clipping from the September 6th, 1925 issue, is the result of the interview, and is, therefore, unbiased,—plainly telling what Mr. Yawger thinks of his A-S-H Coal Bunker.

This Lawn Street Station, located in the heart of Rochester, New York, is the most modern and probably the best example in the country of "what an efficient central heating plant should be." Mr. Rodger D. DeWolf is Engineer of Power Stations for the Rochester Gas and Electric Corporation.

The ALLEN-SHERMAN-HOFF Co.

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Chicago New York Boston Rochester Detroit Kansas City, Mo. Pittsburgh Wilkes-Barre, Pa. St. Louis Indianapolis Atlanta Minneapolis Cincinnati

New York Trade Jottings

The Royal Card and Paper Company, 132-36 West 14th Street, announces its appointment as distributor of all the papers manufactured by the Ticonderoga Pulp and Paper Company.

* * *

Hans Weinberger of 456 Fourth avenue, New York City, and formerly of Rio de Janeiro, announced last week that he would visit Brazil shortly for the purpose of establishing a paper mill there.

* * *

The West Virginia Pulp and Paper Company announces that it has opened a Pacific Coast sales office at 503 Market street, Cunard Building, San Francisco, Cal. This office is under the management of George L. Rodier.

* * *

The Keller-Dorian Paper Company has incorporated under New York State laws with capital stock placed at $10,000. The incorporators are J. L. Silvin and the attorneys are Townsend & Guiterman, 45 Cedar street, New York City.

* * *

Dr. J. W. Zanders, writing paper manufacturer of Bergisch-Gladbach, Germany, arrived in New York last week following arrangements made to visit the offices of the New York Times. Mr. Zanders announced that he intended to make a trip soon to South America.

* * *

Charles A. Mastronardi has filed articles of incorporation with the Secretary of State at Albany, N. Y., to deal in paper. The corporation has 250 shares of stock, no par value. The incorporators are C. A. and C. Mastronardi and the attorney is S. H. Starnberg, 135 Central Park West, New York.

* * *

The numerous friends in the industry of George F. Hardy, the well known paper mill engineer and architect will regret to learn of the death of his wife, which occurred Tuesday of last week, at Cryder's Point, Whitestone, Long Island. The funeral services were held from the Hardy home last Friday afternoon.

* * *

The executive committee of the American Forest Week Committee of which R. S. Kellogg, of the Newsprint Service Bureau is chairman, will hold a meeting in Washington on November 19 to perfect a permanent organization. A meeting was held here some weeks ago at which the executive committee was elected.

* * *

Colonel W. E. Haskell, who joined the International Paper Company in 1918 as assistant to former President P. T. Dodge and has held the office of vice-president of the company since 1919, has resigned his office. He plans an extended vacation in the South before considering another business connection. Col. Haskell for many years has been a member of the News Print Service Bureau's executive committee.

* * *

Stockholders of the International Paper Company approved last Friday the proposal of the management for a readjustment of the company's capital structure. The company's common stock will be changed from shares of $100 par value to shares without par value, and the number of common shares will be increase from 500,000 to 750,000. The preferred stock will be increased from 500,000 to 750,000 shares of $100 par value each. Of the 500,000 shares of common stock of $100 a share par value, 250,000 shares are outstanding. The management intends to exchange 250,000 shares of the new no par value stock for the outstanding common stock on a share for share basis, and to offer an additional 250,000 shares of no par value common stock to present shareholders on a share for share basis at $50 a share. The sale of this stock will give the company an additional $10,000,000. About $4,000,000 of this new money will be used to acquire an interest in the New England Company, a holding corporation for the New England Power Company, and part will be used to develop further the company's paper mills, especially the plant on the Gatineau River in Canada, which is being modeled along the lines of the famous Three Rivers Mills. Development of these properties is expected to reduce the company's cost of production. Subscription warrants entitling stockholders to subscribe to the new stock are expected to be mailed in a few days, as they expire at the close of the month. Payment for the new stock may be made either in full or in four quarterly instalments on November 30, 1925, March 1, June 15, and August 1, 1926. The Board of Directors intends to start dividend payments on the new no par value common stock at the rate of $2 a share annually, beginning August 15, 1926.

Boston Paper Trade Association to Meet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 9, 1925.—The annual fall meeting of the Boston Japer Trade Association will be held at the Exchange Club on Thursday, November 19, at 6.30 P. M. Among the speakers are Hon. Elias B. Bishop Associate Justice of Massachusetts Superior Court who will talk on "The Work of the Criminal Courts" and the Rev. James Gordon Gilkey, of Springfield, Mass., whose topic will be "The New Problem Confronting American Homes."

CONSTRUCTION NEWS

(*Continued from page 40*)

incorporated with a capital of 250 shares of stock, to manufacture and deal in paper goods. The incorporators are C. A. and C. Mastronardi. The company is represented by S. H. Starnberg, 135 Central Park West, New York.

Worcester, Mass.—Finnigan & Mahoney, Inc., has been incorporated with a capital of $10,000, to deal in paper, including waste stocks, etc. Thomas Finnigan is president; and Arthur A. Dufresne, South Quinsigamond avenue, Shrewsbury, Mass., treasurer.

New York, N. Y.—The Keller-Dorian Paper Company has been incorporated with a capital of $10,000, to deal in paper products. The incorporators are G. T. Remsen, G. Mills and J. L. Silvin. The company is represented by Townsend & Guiterman, 45 Cedar street, New York.

Coventry, Conn.—The Sterling Fibreboard Company has been incorporated with a capital of $100,000, to manufacture fibreboard specialties, paper goods, etc. The incorporators are J. T. Aysbury and R. V. W. Vandervoost, Brooklyn, N. Y., and Frank C. Taylor, 157 Monroe street, Coventry. The last noted will be president.

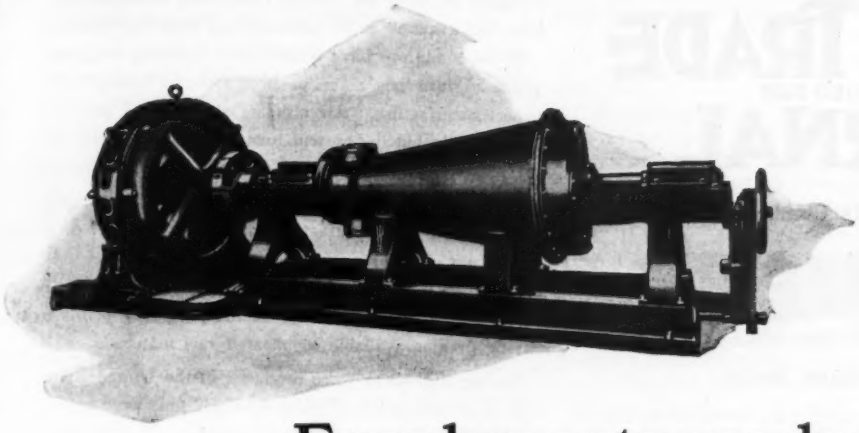
Financial

Philadelphia, Pa.—The Boxboard Products Company, a Delaware corporation, the Corporation Trust Company of America, du Pont Building, Wilmington, Delaware, representative, has filed notice of increase in capital from $10,000,000 to $15,000,000, for expansion.

Troy, N. Y.—The Troy Paper Company has filed notice of reduction of capital from $150,000 to $100,000.

Chicago, Ill.—The Self-Locking Carton Company has arranged for a change of name to the Peter Berkey Corporation.

Utica, N. Y.—The Utica Box Company has filed notice of increase in capitalization from $20,000 to $30,000.



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PAPER TRADE JOURNAL
ESTABLISHED 1872

With Which Is Combined

PAPER

The Magazine of the Paper Industry

HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

Vol. LXXXI New York, November 12, 1925 No. 20

WOOD PULP PRODUCTION IN 1924

Pulpwood consumption and wood pulp production for 1924, compiled in cooperation with the Forest Service of the Department of Agriculture and just issued by the Bureau of the census, contains much interesting information.

The consumption of pulpwood and the production of wood pulp in 1924 were influenced by the brisk demand for news print. The production of news print was only slightly less than that of 1923, although the combined production of all grades of paper apparently decreased considerably.

The continued heavy demand for news print paper naturally resulted in a large production of mechanical and unbleached sulphite pulp, the output of the former during 1924 being the largest of record. This means a continuation of the great drain upon the spruce, fir, and hemlock forests of the Northeastern and Lake States, which have been the main source of our pulp wood supply since the beginning of the manufacture of wood pulp paper in the United States.

In general, there has been a plentiful supply of pulpwood during the past year; in fact, during the latter half of the year it was a drug on the market. As a result, prices weakened considerably throughout the producing regions.

For generations spruce has been one of the favorite lumber trees of the Northeast. During the past few years, Pacific coast common lumber, shipped east through the Panama Canal, has entered all the eastern markets, western manufacturers having been able to place their product at prices which eastern manufacturers have great difficulty in matching. This has brought about a reduction in lumber production in the spruce forests of the Northeast, and has thereby released for use as pulp wood considerable spruce timber which had hitherto been considered unavailable to the industry.

In the Lake States the same situation has developed, except that hemlock has been the species most affected. Large quantities were formerly cut for lumber in that region, but during the past two years hemlock has been unable in many markets to compete with Douglas fir from the Pacific coast, and therefore the pulp mills have had available more hemlock logs than they could use.

These conditions have resulted in a lowering of pulpwood prices, which in turn has made possible some reduction in the cost of paper manufacture. An ultimate shortage of pulpwood supplies still impends, but the present turn of conditions gives more time to put pulpwood operation upon a continuously productive basis.

The comparatively small decrease in the total quantity of wood consumed in the manufacture of pulp in 1924 as compared with 1923 is not of great significance. The greatest decreases, however, occurred in the principal pulp producing regions and may be taken to indicate a gradual shifting of the producing plants to territory having greater available supplies of raw material.

During 1924 there were produced in the United States 1,643,283 tons of ground wood of which 1,547,332 tons were not steamed and 95,951 tons were steamed, of sulphite 1,336,551 tons of which 850,271 tons were unbleached, and 506,280 tons were bleached, of soda 440,697 tons of which 18,164 tons were unbleached and 422,533 tons were bleached, and of sulphate 302,735 tons of which 279,645 tons were unbleached and 23,000 tons were bleached.

The average value per ton for the year was $30.98 as compared with $30.89 in 1923 for ground wood not steamed and $34.57 as compared with $37.00 in 1923 for ground wood steamed. The average price per ton for the year was $54.73 as compared with $60.13 in 1923 for unbleached sulphite and $82.92 as compared with $82.24 in 1923 for bleached sulphite. The average price per ton for the year was $63.39 as compared with $72.65 in 1923 for unbleached soda and $73.69 as compared with $76.15 in 1923 for bleached soda. The average price for the year was $50.97 as compcompared with $55.81 in 1923 for unbleached sulphate and $65.30 as compared with $61.19 in 1923 for bleached sulphate.

There were produced in the United States in 1924, 3,723,266 tons of wood pulp of which 44.1 per cent were ground wood, 35.9 per cent were sulphite, 11.8 per cent were soda, 8.1 per cent were sulphate and 1 per cent were screenings.

In 1923 there were produced 3,788,672 tons of which 41.4 per cent were ground wood, 37.3 per cent were sulphite, 11.7 per cent were soda, 8.2 per cent were sulphate and 1.4 per cent were screenings.

In 1919 there were produced 3,517,952 tons of which 43.2 per cent were ground wood, 40.3 per cent were sulphite, 11.7 per cent were soda, 3.4 per cent were sulphate and 1.3 per cent were screenings.

Maine was the leading producer of wood pulp in 1924 with New York second; Wisconsin, third; Pennsylvania, fourth; Washington, fifth; New Hampshire, sixth; Michigan, seventh; Minnesota, eighth; Virginia, ninth, and Louisiana tenth.

The imports of pulp wood in 1924 decreased somewhat as compared with those for 1923. The imports of chemical wood pulp continued to climb and reached a new high level in 1924, exceeding that for 1923 by 199,859 tons, or 18.6 per cent. Mechanical pulp, however, showed a decrease for 1924 as compared with 1923.

Imports of paper were greater for 1924 than for any other year of record.

The value of exports of pulp increased considerably and that of paper increased slightly for 1924 as compared with 1923, the rates of increase being 57.7 per cent and four-tenths of 1 per cent, respectively.

Canadian Exports for September

According to the report issued by the Canadian Pulp and Paper Association, the total value of pulp and paper exported from Canada in September was $13,686,006 an increase of $1,085,396 over the total for August and of $2,029,540 over September, 1924.

The value of wood-pulp exported in September was $4,843,226, an increase of $1,021,069 over the previous month and the highest monthly total recorded since the year 1920.

Exports of paper in September were valued at $8,842,780, an increase of $64,327 over the previous month.

Comparison between September, 1925, and the corresponding month in 1924 is shown below:

	September, 1925		September, 1924	
	Tons	$	Tons	$
PULP:				
Mechanical	40,127	1,223,991	29,417	867,964
Sulphate	12,694	766,625	11,527	679,735
Sulphite Bleached	17,308	1,331,750	14,125	1,039,235
Sulphite Unbleached	26,286	1,520,860	17,928	926,872
	96,415	4,843,226	72,997	3,513,806
PAPER:				
Newsprint	116,278	8,190,090	101,843	7,454,239
Wrapping	1,747	238,740	2,267	344,917
Book (Cwts.)	3,953	36,623	1,688	12,644
Writing (Cwts.)	598	4,560	1,901	20,048
All Others	.....	372,767	.....	310,812
		8,842,780		8,142,660

For the first nine months of the current year, exports of pulp and paper were valued at $111,519,865 as compared with a value of $103,050,333 in the corresponding months of 1924, an increase for this year of $8,469,532. Exports of pulp for this period amounted to $34,181,917 while exports of paper accounted for $77,337,948.

Details of the various grades of pulp and paper exported during the first nine months of the year are as follows:

	9 Months 1925		9 Months 1924	
	Tons	$	Tons	$
PULP:				
Mechanical	227,768	6,701,435	155,798	4,991,948
Sulphate	110,492	6,765,950	107,177	6,293,346
Sulphite Bleached	138,165	10,350,878	122,928	9,218,067
Sulphite Unbleached	192,781	10,363,654	157,945	8,276,676
	669,206	34,181,917	543,848	28,780,037
PAPER:				
Newsprint	1,017,500	71,713,472	906,747	68,003,040
Wrapping	15,728	2,135,963	17,000	2,525,828
Book (Cwts.)	30,668	286,309	16,346	130,540
Writing (Cwts.)	8,234	69,887	12,839	138,350
Paperboard	.....	2,333,049	.....	2,542,274
All Others	.....	799,268	.....	930,264
		77,337,948		74,270,296

Exports of pulpwood in September were 117,715 cord valued at $1,237,132, a decline from the previous month when the total was 148,672 cords valued at $1,566,479.

Pulpwood exports for the first nine months of the year amounted to 1,185,495 cords valued at $11,775,969, compared with 1,090,425 cords valued at $11,140,838 exported in the first nine months of 1924.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—The Government Printing Office has received the following bids for 21,750 pounds of 21 x 32 No. 8, Manifold Onion Skin Paper: R. P. Andrews Paper Company, 22.67 cents per pound; Whitaker Paper Company, 23.23 cents; Virginia Paper Company, 23.02 cents; American Writing Paer Company, 30.85 cents; and 21.85 cents; Barton, Duer & Koch Paper Company, 22.75 cents; Doebler & Mudge, 22.69 cents; Reese & Reese, 37.03 cents; Maurice O'Meara Company, 24.25 cents; and Old Dominion Paper Company 23.37 cents.

The Printing Office has also received the following bids for 700 pounds of 22½ x 28½, 140 pounds, yellow or canary jute tag board: Reese & Reese, 12.5 cents per pound; American Writing Paper Co., 11.25 cents; Virginia Paper Company, 14.19 cents; Mathers Lamm Paper Company, 12 cents; and Old Dominion Paper Company, 12.49 cents.

The following bids were also received by the Printing Office for 9,450 pounds of 24 x 38, 31½ No. 13 White Bond Paper: Aetna Paper Company, 18.16 cents per pound; American Writing Paper Company, 19.46; Barton, Duer & Koch Paper Co., 18.2; Barton, Hobart Paper Company, 19.84 cents; and Reese & Reese 18.49 cents.

The Printing Office also received a bid from the R. P. Andrews Paper Company for 3,043 pounds of first class chart paper at 29.5 cents per pound.

The Government Printing Office has received the following bids for 34,650 pounds of various sizes double coated book paper: R. P. Andrews Paper Company, 12.74 cents per pound; Mathers Lamm Paper Company, 13 cents; Reese & Reese, 12.8 cents; Maurice O'Meara Company, 14.25 cents; Old Dominion Paper Company, 13.29 and 14.24 cents; McLaurin-Jones Company, 12.75 cents; Allied Paper Mills, 12.75 cents; and Doebler & Mudge, 12.75 cents.

The Government Printing Office received bids on November 3 for 25,000 pounds white machine finish paper, 50 per cent rag, as follows: American Writing Paper Company, 11.76 cents per pound; Barton, Duer & Koch Paper Company, 14 cents; Liendemeyr & Harker, 10.5 cents; Old Dominion Paper Company, 15.64 cents and Bryant Paper Company, 10.18 cents.

The Government Printing Office also received bids for 1,810 pounds Salmon Index Bristol Board, 22½ x 28½, 181 pounds: Carter, Rice & Company Corporation, 21 cents per pound; Carew Manufacturing Company, 30 cents; Old Dominion Paper Company, 19.75 cents; Barton, Duer & Koch Paper Company, 19 cents; R. P. Andrews Paper Company, 19.75 cents; Whitaker Paper Company, 20.93 cents; Mathers-Lamm Paper Company, 18.9 cents; Maurice O'Meara Company, 21 cents; and American Writing Paper Company, 29 cents.

For Vocational Education at Green Bay

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wiscinson, November 9, 1925.—E. E. Gunn, Wisconsin state supervisor of vocational education, is endeavoring to interest Green Bay in paper mill education in the city's vocational school as is being advanced in other cities of the Fox River Valley, namely Appleton, Neenah, Menasha and Kaukauna.

An "up-grading" educational project has been introduced in these cities by when men from paper mills are taken into the school and prepared for higher and more responsible positions, and if it is thought reasonably possible that this work would be of benefit to the industries of Green Bay, classes of the same sort will be inaugurated at the vocational school of that city.

The paper mill school is an intricate problem which must be closely surveyed before attempting it, H. G. Stewart, director of the Green Bay school says. It would not do to start the school without first being sure whether or not "grades" really exist in the mills. If it is found that there is possibility of increasing a man's responsibility to an extent which will benefit both the worker and the plant, the propect will be introduced soon, Mr. Stewart announced.

Paper Specifications Committee Meets

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—The paper specifications committee of the Joint Congressional Committee held its first meeting last week to take up the specifications for paper for the Government Printing Office for the fiscal year beginning March 1. Meetings will be held right along now until the schedule is completed. This schedule must be presented to the Joint Committee early in December. Bids will be opened the latter part of January and awards made one week later, generally the first week in February.

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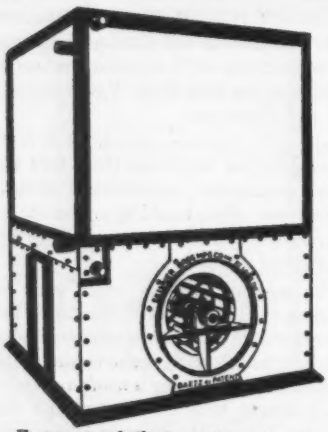

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"We feel greatly pleased with the Skinner Bros Steam Coil Heaters in our plant and we have had some days of 16 degrees below zero, when all were comfortable inside of the plant."—International Paper Box Machine Company.

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See our Exhibit in the Fourth National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, Nov. 30 to Dec. 5, 1925.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Dr. Ruths Steam Accumulator Systems Inspected

By W. G. MacNaughton

During my recent visit to Sweden and Norway with A. J. T. Taylor, of Toronto, and other eminent engineers of the United States and Canada, I had the opportunity of studying typical installations of Doctor Ruths Steam Accumulator systems in several industries. The different kinds of plants seen were electric power distribution stations, textile mills, a brewery, a sugar refinery, a rubber factory, a hotel, a dairy, a technical school, and several pulp and paper mills.

In company with Dr. Johannes Ruths and Mr. Nils Frenne, one of his associates, on arriving at Malmo we visited the Municipal Electricity Works there and then drove by automobile along the west coast of Sweden through very interesting and beautiful country to Halmstad. There, after visiting the electricity works, also equipped with a steam accumulator, we proceeded to Gothenburg. At Gothenburg and in the vicinity at Boras and Wiskafors we saw several textile plants, a brewery, a sugar refinery, and a rubber factory, in each of which was a steam accumulator.

At Stockholm we saw installations, in the technical high school and also in a hotel and a dairy. Subsequently in a trip through a number of paper and pulp mills I saw three steam accumulator installations in Sweden and two in Norway. One of the Swedish mills visited, that at Hallsta, had the very first installation of the kind, which was made in 1916.

At each place the steam accumulator is regarded as an essential part of the plant equipment.

Electric Power Stations

At Malmo and at Halmstad current is received from a hydroelectric power development and is distributed for lighting and power purposes, including the operation of the city street car systems. As a standby the stations have boiler plants and steam turbines in case of interruption to the supply of electricity. The steam accumulators are kept charged and are of sufficient capacity to operate the turbine driven generator for the full demand for about an hour. When an interruption occurs that is to be longer than this there is sufficient time for steam to be raised in the boilers which can then carry the load.

At both plants, in order to demonstrate the automatic operation of the steam accumulator controls, the switch was pulled, cutting off the hydroelectric power. Without the flicker of the lights the steam turbine started up and the accumulator carried the load.

In the industrial plants, pulp and paper mills, textile plants, sugar refinery, brewery, and rubber factory, the steam accumulator demonstrated how it could equalize the fluctuations in the demand for steam, making it possible for the steam plants to operate uniformly at the most economical rate of output.

In all such plants there are periods of greater or less duration where the normal demands for steam are much greater than at others. During periods when the demand for steam is low the accumulator is charged with the surplus steam generated by the boilers, which continue to operate at a constant rate to correspond with the average demand for steam. The steam stored in the accumulator is discharged again during the periods of high steam demand.

At such times the accumulator takes over a large part of the boiler load and does for the boiler plant the same service as the flywheel does for the steam engine. With the aid of the accumulator system the boilers thus become independent of the fluctuating demand of the industrial plant, and can be operated at the most efficient rate of steam production.

On the other hand the industrial plant requiring process steam of a definite pressure in large quantity at certain periods is not required to install sufficient boiler capacity for the peaks, but only for the average demand.

Conditions of widely fluctuating steam demand are especially true of chemical pulp mills. Since Doctor Ruths, while a director of one of the largest pulp mills in Europe, made his first development of the steam accumulator, this is undoubtedly the reason for the first and rapid development of the steam accumulator in the cellulose industry.

It has been found, however, on analyzing industrial plants of various kinds, that all of those using process steam have similar fluctuations and are equally benefited by using the steam accumulator system.

The system is so arranged that the charging and discharging of the accumulator takes place entirely automatically, according to whether the demand for steam exceeds or falls below the average demand which the boilers are regulated to supply. By means of a system of automatically operating control valves the accumulator system acts not only as an equalizer of the amount of steam taken from the boiler, but also of the different steam pressures.

In the table of the 218 installations which have been made in 18 countries, it will be seen that more than 13 different industries have already used Doctor Ruths' accumulator system to advantage.

In connection with the cellulose industry it is interesting to note that in Sweden, out of 87 such plants, 13 are using the accumulator. In Norway, out of 25 chemical pulp mills, there are 9 with accumulators, while in Finland there are 13 plants so equipped out of 25 in that country.

In the British Empire there are approximately 46 chemical pulp mills, 3 of which have installed accumulators, while in United States there are 2 accumulators for 155 chemical pulp mills.

To judge by the number of engineers who have investigated the accumulator during the past few months, and the reports which were everywhere made as to the increased plant efficiency resulting from its use, it is expected that very soon a large number of installations will be made in the United States and Canada.

	Paper and Pulp	Textile	Chemical and Technical Works	Electric Power Stations	Dairies	Breweries	Iron Works and Mines	Hospitals	Educational Institutions	Railway Car Preheating	Hotels	Laundries	Various Industries	
Sweden	31	12	11	2	7	4	3	3	1	1	1	1	..	77
Germany	14	13	9	8	1	..	2	..	1	..	..	..	2	50
Norway	9	..	1	..	1	2	1	2	..	..	..	..	..	16
Finland	13	..	..	..	1	1	..	..	..	..	..	..	..	15
France	4	5	2	..	..	..	1	..	..	..	..	..	1	13
Holland	1	5	3	..	..	..	..	..	..	..	..	..	2	11
British Empire	5	2	3	..	..	..	..	..	..	..	..	..	..	10
Austria	3	1	..	..	..	..	..	..	..	..	..	..	..	4
Italy	..	4	..	..	..	..	..	..	..	..	..	..	..	4
Czecho-Slovakia	1	3	..	..	..	..	..	..	..	..	..	..	..	4
Denmark	..	..	2	..	..	1	..	..	..	..	..	..	..	3
Esthonia	1	1	..	..	..	..	..	..	..	..	..	..	..	2
Switzerland	..	..	..	..	..	2	..	..	..	..	..	..	..	2
United States	2	..	..	..	..	..	..	..	..	..	..	..	..	2
Belgium	..	2	..	..	..	..	..	..	..	..	..	..	..	2
Poland	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Rumania	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Brazil	..	1	..	..	..	..	..	..	..	..	..	..	..	1
	85	49	32	10	10	10	7	5	2	1	1	1	5	218

Use of Glue in Coated Papers

WASHINGTON, D. C., October 14, 1925.—The Paper Laboratory of the Bureau of Standards has issued the following statement in connection with its recent tests of the use of glue in coated paper:

"For the past two years the bureau, with the cooperation of the National Association of Glue Manufacturers, has been studying the use of glue in coated papers. Results thought to be of commercial utility have been obtained, and to assist in the industrial application of these results, a demonstration was given on September 22, 23 and 24 for representatives of the glue and the paper industries.

"In the manufacture of coated paper a layer of mineral matter known as the 'coating raw stock,' is applied to the comparatively rough surface of the paper, a suitable adhesive being mixed with the mineral matter, and the whole, in aqueous mixture, is then spread on the paper by rapidly moving brushes. After this mixture is applied, the paper is dried, generally in festoons, and 'supercalendered' to smooth the coating and give it a high gloss. Such paper is used chiefly for magazine and book printing, where a smooth, continuous surface is required to permit the use of fine screen halftones, and for lithographic and offset work.

"In this country casein is employed almost exclusively as the adhesive in binding the coating, although abroad glue is more commonly used. As both the supply and quality of casein are subject to constant fluctuation, and as its continued availability for coating purposes seems rather doubtful in view of its food value, there is real interest among domestic manufacturers in finding a suitable substitute. There was little definite data available concerning the use of glue for this purpose, and as it seemed to be the most suitable alternative adhesive for the purpose, the necessary research was undertaken to obtain such data.

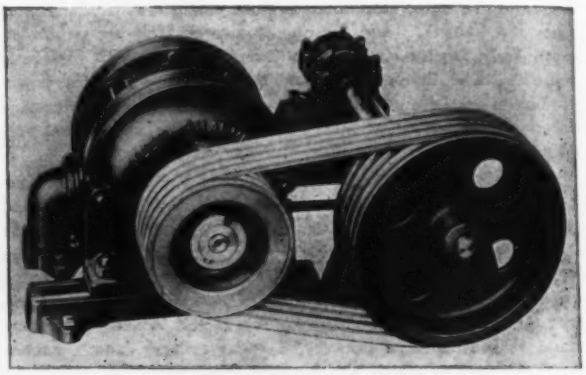
"Two days were given to a demonstration of the manufacture of glue-coated papers, in the bureau's paper mill. Papers were coated with the different minerals commonly used—clay, stain white, and blanc fixe—and by the use of different kinds of glue. Casein-coated paper was also made for comparison. The entire paper-making process was shown—the raw materials were mixed, beaten, made into coating raw stock, the various coatings were applied, the coated papers supercalendered, and the finished papers tested for gloss, color, and other properties. The third day was devoted to a demonstration of the printing qualities of the papers at the Government Printing Office, which has assisted throughout the research by making actual service tests of the papers produced in the course of the various experiments.

"The results demonstrated were: That with proper selection of the glue used, and adaptation to local conditions and product requirements, the use of glue in coating paper requires little change in equipment and involves little change in present operating technique from procedure with casein; that the choice of various types of glue offers a considerable latitude within the local conditions can be met; and that the use of glue-bound coated paper offers no difficulty to the printer and engraver for ordinary work."

The Texrope Drive

An important development in the field of power transmission machinery has just been announced by the Allis-Chalmers Mfg. Co., who have recently perfected an entirely new type of short center, flexible drive, known as the Texrope drive.

The Texrope drive consists of two grooved sheaves and a number of specially constructed endless "V" belts. The sheaves are set just far enough apart so that the belts fit the grooves without either tension or slack.



ALLIS TEXROPE DRIVE

Previously no short center drive existed which did not have slip, back lash or lost motion, which caused jerky starting and uneven running. Since the Texrope belts just fit the sheaves, there is no slack or lost motion in the drive. Because of the "V" construction, they cannot slip, as the harder the pull the more firmly the belts grip the grooves. Being elastic and stretchable, they cannot jerk, either in starting, acceleration or running, nor can they transmit vibrations, but act as cushions between the driving and driven machines. Therefore smoothness of transmission never attained before is delivered by the Texrope drive, as opposed to the series of linear pulsations delivered by the ordinary short center drive.

Bearing pressures are low, since no belt tension is employed. The drive occupies very little space. It is silent, perfectly clean, unaffected by moisture or dirt, and is safe, simple and trouble proof. Since there is no slip, the speed ratios are fixed and exact. It is durable, and each belt carries its proportional share of the load.

Texrope drives from ½ to 250 hp., with ratios up to 7 to 1 and belt speeds from 800-6000 feet have already been placed in service. They have been applied to nearly every industry, notably textile machinery, fans and blowers, machine tools, food manufacturing machines, refrigeration, mining, crushing, wood and metal working machinery, elevators and conveyors, paper, flour and rubber mill drives, etc.

A New Method of Cooking Straw For Strawboard *

By John D. Rue[1] and William Monsson[2]

TABLE 1

COOKING CONDITIONS AND YIELDS OF PULP FROM WHEAT STRAW

(Basis—100 pounds oven-dry straw)

Cook No.	Oven-dry weight of straw	Amount of chemical used		Total water in cook	Maximum temperature	Time to maximum temperature	Time at maximum temperature	Maximum gauge pressure	Yield of pulp	Quality of pulp	Board No.
		Na_2CO_3	Na_2SO_3								
	Pounds	Pounds	Pounds	Gallons	Degrees C.	Hours	Hours	Pounds per sq in.	Per cent		
5	132	5.3	5.3	20.0	150	4	2	66	78	Raw	5
6	134	7.5	1.5	20.0	145	2	8	49	67	Good	6
8	134	7.5	1.5	20.0	145	2	6	49	77	Good	8
9	136	5.0	1.0	20.0	145	2	6	49	72	Color dark otherwise good	9
10	141	10.5	2.1	20.0	145	2	6	49	76	Good	10
Commercial	14,550	7.5	1.5	18.0	127	—	10	—	—	Good	

TABLE 2

PHYSICAL PROPERTIES OF STRAWBOARD MADE AT THE FOREST PRODUCTS LABORATORY

(Straw cooked with a mixture of Na_2CO_3 and Na_2SO_3)

Board No.	Weight per ream 24x36—500	Thickness	Mullen test	Strength factor	Breaking length	Tearing test
	Pounds	Inches	Points	Points per lb. per rm.	Meters	Grams
5	101.0	0.0100	35.4	0.35	2,979	66
6	108.6	0.0108	44.5	0.41	3,363	100
8*	130.2	0.0113	72.8	0.56	4,616	109
9*	152.9	0.0105	90.9	0.59	4,576	122
10*	105.7	0.0095	56.3	0.53	4,232	82

* Pulp passed once through rod mill.

* Supplement to the article by Messrs. Rue and Monsson printed under this title on pages 52 and 53 of the Paper Trade Journal of Oct. 8, 1925.

[1] In charge, Section of Pulp and Paper, Forest Products Laboratory, Forest Service, Madison, Wis.

[2] Assistant Chemist in Forest Products, Forest Products Laboratory, Forest Service, Madison, Wis.

TABLE 3

PHYSICAL PROPERTIES OF STRAWBOARD MADE AT COMMERCIAL MILLS

Sample No.	Weight per ream 24x36—500	Thickness	Mullen test	Strength factor	Breaking length	Tearing test	Chemical used in cooking
	Pounds	Inches	Points	Points per pound per ream	Meters	Grams	
P 482	101.9	0.0102	35.1	0.34	2,505	82	Na_2CO_3+Na_2SO_3
P 484	291.6	0.0250	126.6	0.43	3,429	307	Na_2CO_3+Na_2SO_3
P 485	313.4	0.0245	78.4	0.25	2,096	214	Lime
P 486	296.2	0.0265	63.6	0.22	1,927	200	Lime

Note—Boards P 482, P 484, and P 485 were all made at the same mill.

TABLE 4

ANALYSIS OF WHEAT STRAW AND STRAWBOARD

Material and sample No.	Chemicals used in cooking	Moisture in sample as analyzed	Based on dry weight of samples						
			Ash	SiO_2	CaO	Hot water soluble	One per cent NaOH soluble	Lignin	Cellulose
		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
Wheat Straw 1023		3.98	8.82	6.62	...	10.6	43.1	28.0	56.3
Strawboard 7253-J3C2	Na_2CO_3+Na_2SO_3	...	5.91*	4.88*	...	...	...	16.4*	48.4*
		6.16	8.85	7.31	...	1.9	20.3	24.5	72.4
P 485	Lime	6.48	13.80	6.60	5.65	4.8	27.3	22.7	60.2
P 486	Lime	6.83	15.07	7.07	7.63	5.1	31.1	21.6	60.4
			Based on dry weight of ash-free sample						
7253-J3C2						2.1	22.2	26.8	79.3
P 485						5.6	31.8	26.4	70.0
P 486						6.0	36.6	25.4	70.8

*Based on the weight of the dry straw before it was cooked. Calculated from the yield of 66.8 per cent.

A Study of the Efficiency of Guillotine Paper Cutting Knives*

By I. C. Matthews

In 1921 the Research Laboratory of the Eastman Kodak Company was requested to make a detailed study of the knives used for cutting sensitized photographic paper and of the methods for grinding such knives. The work lasted a long time, dealing with the comparative efficiencies of sandstone and of emery ground knives, and with knives procured from various sources.

Experiments on the Comparative Efficiencies of Sandstone and Emery Ground Knives

Prior to January 1, 1922, experiments in our Paper Cutting Department had shown that knives ground on sandstone gave six to eight times the number of cuts per grinding that was given by those ground on emery. The most serious trouble in the emery ground knives was their tendency to nick. By the time 300 cuts has been registered nicks and crumbly places along the knife edge were quite noticeable. This resulted in scratched paper, which was worse than when a sandstone ground knife was used.

The superiority of the sandstone to the emery grinding is probably due to the greater control and the lower pressures possible in sandstone grinding. The carriage on the sandstone machine is operated by hand, which allows a change of pressure at the will of the operator, while the emery grinder is an automatic machine which applies great pressure to the knife edge. Furthermore, in the grinding operation the sandstone wheel runs at approximately one-fifth of the speed of the emery, and at this slow peripheral speed of 100 r.p.m. particles of quartz float in the surface water and give a planing action on the knife, often with a shearing cut as they are dragged under the knife.

Nevertheless, it was desirable that we should improve our emery grinding practice because emery ground knives have more uniform edges than knives ground by standstone, and a greater number of knives can be ground in a shorter time and therefore more economically by emery than on sandstone.

To produce a more durable edge on the emery ground knife, many changes were made in the methods and equipment used for emery grinding, as follows:

(a) Changes in Feed and Speed of the Knife Carriage.—The feed rate of the knife carriage was from 0.002—0.003 inch per pass of knife. At somewhat less than this, at a feed where a knife could not "burn" down to 0.0005 inch, gradual reductions in feed were made but no difference in result was noted. The carriage was equipped with two speeds and these were reduced to at least 50% without noticeable difference in cutting results on the knives ground.

(b) Changes in Wheel Speeds.—The normal cutting speed of 5000 feet per minute for carborundum or aloxite wheels was reduced gradually to 2400 feet per minute with no effect on cutting efficiency.

(c) Use of Wheels Made from Different Grain Sizes of Natural and Artificial Abrasives, Such as Carborundum, Emery, Aloxite, Alundum, Etc.—It was found that grits coarser than number 60 or finer than number 120 burned a knife during grinding. Number 70 grit wheel in any type of abrasive gave the best knife edge under a magnifying glass, but did not affect cutting results.

(d) Use of Different Binders in the Wheels Such as Silicate, Shellac, and Rubber.—No differences were noted in cutting results from these differently bonded wheels.

(e) Use of Solid and Segmented Cup Wheels.—Segmented cup wheels were found to give better results in grinding.

(f) Use of Various Lubricants at Different Temperatures.—The cooling liquid, circulated by a pump located at the base of the machine, was a sal soda solution. This was kept at room temperature and was only used in place of water at a similar temperature in order to prevent rusting of the knives during grinding. No difference in result was noted. Hot water used as a lubricant showed no advantage.

(g) Changes to Eliminate Vibrations from a Knife Edge While Being Ground.—Best grinding results were obtained when the machine was placed on a solid concrete base.

Knives from the emery grinding machine finally showed edges free from all nicks and turned-over metallic spots. A large printing and bookbinding establishment tested the efficiency of the work of our Emery Grinding Department in comparison with that of a commercial emery grinder and found that approximately 33% more cuts were obtained from our emery ground knives. Our own tests were made on sensitized paper while the printer's tests consisted in the cutting of book stock, enamel coated and bond papers, etc.

* Communication No. 248 from the Research Laboratory of the Eastman Kodak Company.

Fig. 1

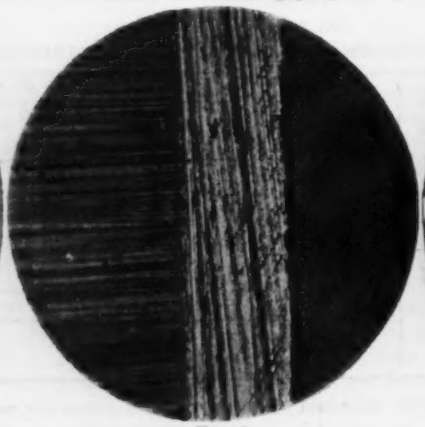


Fig. 2

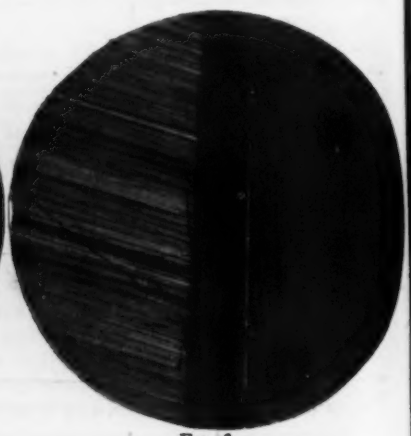


Fig. 3

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FIG. 4

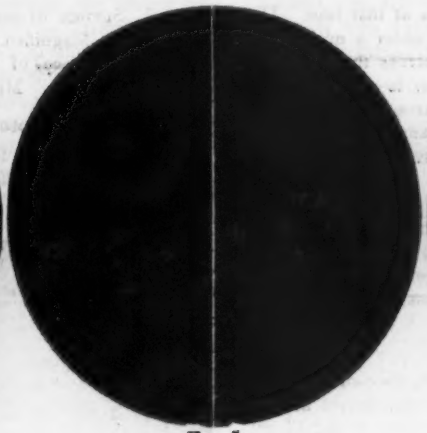

FIG. 5

FIG. 6

The sandstone ground knife, having shown superior results to the emery ground for cutting sensitized paper, it was decided to grind all production knives on the sandstone. It was desirable that a type of sandstone of the greatest efficiency be obtained. Table No. 1 shows the comparable results of stones tried to date:

TABLE 1

Type of Sandstone	Obtained from Mfr. or Representative	Comparison to Regular Stone	Total No. Grindings to date (3/12/24)	Average No. Cuts per Grinding	Remarks
Yellow Sandstone No. 2 high in iron	A	Regular stone	?	?	It would not be right to consider the average of 2600 cuts obtained in 1921 as characteristic of this stone, since knife quality and paper have changed largely from then up to the present time.
English Sandstone	B	Softer; too much dirt present	Record not taken	Record not taken	Although the record was not taken on this stone, the knives showed no increased cutting over the regular ground knives.
Blue Sandstone B-1	C	Harder, but no iron present to chip out. Gives coarse edge on knives.	205	2404	One knife ground exclusively on this stone 12 times gave 2404 cuts per grinding.
White Sandstone 2-W	D	Slightly harder, but better than any stone yet used so far as grinding practice is concerned. Gives fine edge on knives.	198	2414	One knife ground exclusively on this stone 13 times gave 2396 cuts per grinding.

Knives were purchased from practically all important knife manufacturers, and comparisons were made between these knives under various conditions of handling and treatment. The results were irregular, and it was apparent that the manufacturers cannot duplicate their knives.

FIG. 7

The following method was found serviceable in checking the accuracy of finish and the comparative wear of knives from different manufacturers:

The knife is laid on a planer bed. It is bolted to this bed with the same number of bolts used in fastening it to a knife bar in a

FIG. 8

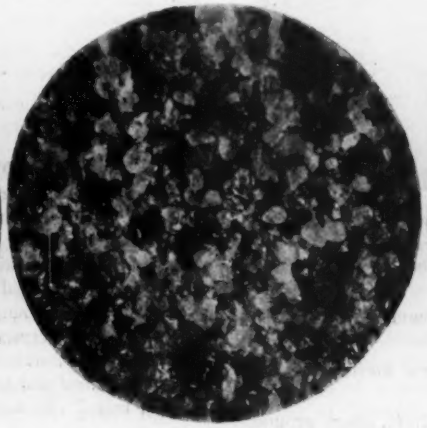

FIG. 9

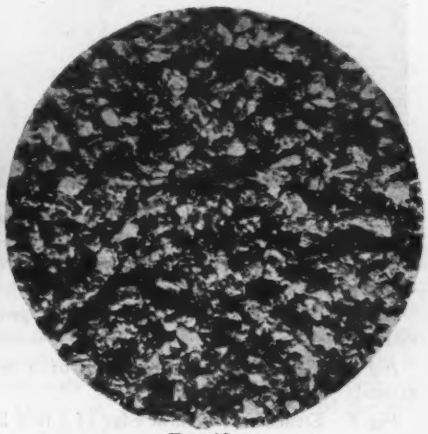

FIG. 10

cutting machine, thus taking the same shape as at that time. The bed with the knife bolted in this way moves under a micrometer so that readings, ten in number, are taken across the length of the knife on its cutting edge. The micrometer is now moved to the center of the knife at one end and another set of readings is taken lengthwise of the knife in the same manner. This middle set of readings shows the accuracy of concavity in the face of the knife, which should be from 0.0025" to 0.004". Finally, a third set of readings is taken at the back edge of the knife.

In addition to the results obtained by this method each experimental knife from the different manufacturers was measured for width after fifteen or more grindings had been made, and from this it was possible to compute the average loss per grinding per knife.

Photomicrographs

In connection with these grinding experiments, photomicrographs were taken of both sandstone and emery ground knives at different periods of use. With the exception of Figs. 9 and 10, all the photomicrographs were obtained by a modification of the vertical method of illumination. A list description of the conditions under which each specimen was taken, together with the photomicrographs follows:—

Fig. 1. Surface near edge of knife No. 98, sandstone ground and used for nearly 5000 cuts. Specular reflection. Magnified 70 diameters.

Fig. 2. Surface near edge of knife No. 99, sandstone ground, honed surface. Magnified 70 diameters.

Fig. 3. Surface near edge of knife No. 98, emery ground, beveled surface. Magnified 70 diameters.

Fig. 4. Surface near edge of knife No. 98, emery ground, honed surface. Magnified 70 diameters.

FIG. 11

Fig. 5. Edge of a new knife, sandstone ground. Magnified 70 diameters.

Fig. 6. Edge of a new knife, emery ground. Magnified 70 diameters.

Fig. 7. Etched surface near edge of a new knife, sandstone ground. Magnified 500 diameters.

Fig. 8. Etched surface near edge of a new knife, emery ground. Magnified 500 diameters.

Fig. 9. Surface of sandstone used for grinding knives, oblique illumination. Magnified 12.5 diameters.

Fig. 10. Surface of emery stone used for grinding knives, oblique illumination. Magnified 12.5 diameters.

Photographic "Cut" Record

Because of the need for a permanent record of the quality of cutting of a knife at different periods of its use, it was suggested

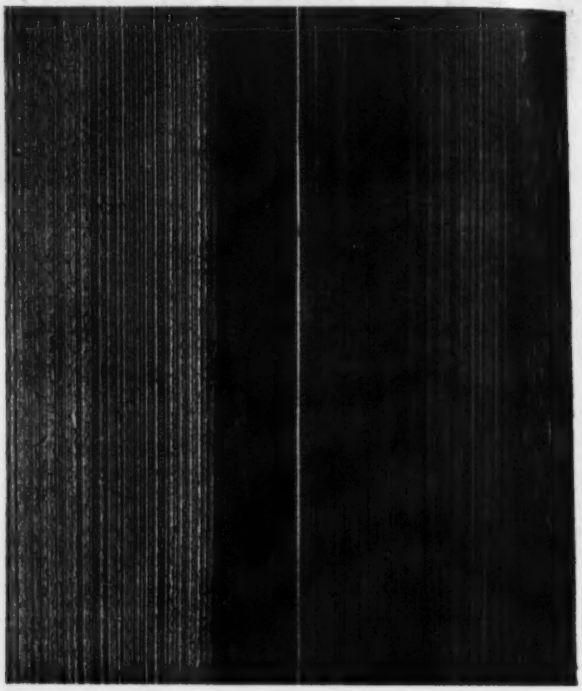

FIG. 12

that photographs of the paper itself be taken at different periods. Some of the characteristic differences already shown for samples of the same kind of paper cut by different knives are illustrated in the photographs following, also a "standard" sample, representative of the best quality of cutting from a sandstone ground knife.

Fig. 11. Sample from a "standard" sandstone ground knife showing the best cutting results obtained.

Fig. 12. Sample showing results of cutting in 1920-1921 from sandstone ground knives.

Fig. 13. Sample showing average cutting results from sandstone ground knives at the present time.

Fig. 14. Sample showing poor results from an emery ground knife taken after one cut had been made.

Application of Beilby's Theory

Although various workers have disagreed with Beilby's views on the flow of solids and the amorphous phase in metals, his is the most logical theory to account for the nicks likely to occur in an emery ground knife. It is well known that all steels and alloys when in the solid state are composed of crystals, of varying size and shape, bound together. In 1903, Beilby[1] advanced his theory, "that the crystals are cemented together by a portion of the metallic substance that fails to form crystals itself but is distributed around and between the crystals and cements them into one solid mass." In accordance with this theory, steel may exist

[1] "Aggregation and Flow of Solids."

in two states, the amorphous, of which cementite, the binding medium of the crystals, is representative, and the crystalline state, composed of martensite, troostite, and other crystals. The crystalline state can be transformed into the amorphous by working or stressing the steel and when stressed increasingly a point is reached where large crystals begin to divide into smaller ones. This marks the elastic limit of the steel and the division of the crystal will occur along cleavage planes.

The presence of these cleavage planes, also known as slip bands, seems to account for the occurrence of nicks in emery ground knives. The crystals are differently oriented, some being so situated that they resist strain better than others with the result that those unfavorably oriented break first and the others hold until the strain increases. As previously stated, some of the crystalline cetal is changed to the amorphous state by the work done upon the metal while being strained. This amorphous metal is quite plastic at first but later hardens so that when a specimen is stressed soon after cold working (cutting after grinding, honing or polishing) there is a constant yielding of the amorphous metal under such stress and eventually the whole specimen will yield somewhat. In this way the cementite or amphorous metal is broken and the crystalline metal, i.e., the martensite, troostite, etc. slips, or is differently oriented. Similarly, in the case of emery ground knives where they are subjected to continuous mechanical stress during grinding the above conditions hold, and as the sliding occurs various portions of a knife edge become susceptible to nicking when the

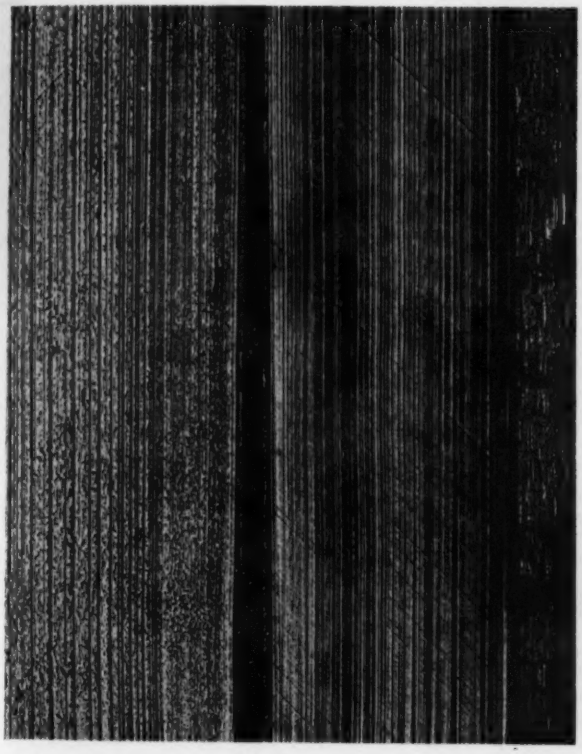

FIG. 13

knife is used. This is not true with sandstone ground knives where but slight pressure is applied during grinding. The conditions above mentioned for the occurrence of nicks in an emery ground knife are greatly enhanced in the case of photographic paper cutting with the edge subjected to the baryta coating on the paper, this coating acting as an abrasive.

In connection with this work we are indebted to Mr. Jewell and Mr. Harris of this Laboratory for the photomicrographs and photographs, also to Mr. H. H. Tozier, Mr. E. P. Flynn, Mr. H. E. Hastings, and others in our manufacturing and maintenance departments who have rendered advice and kindly co-operated in portions of the work as described.

Summary

1. A resume is given of the work done on the comparative efficiencies of sandstone and emery ground knives for the cutting of photographic paper.

FIG. 14

2. Photomicrographs are shown of both sandstone and emery ground knives, taken at different periods of their use, and under different conditions, and from representative samples of the respective stones.

3. Photographs are given of samples of paper showing the quality of cutting of any knife and a "standard" cut representing the best practice obtained.

4. A theory and a specific mechanical reason, accounting for the superiority of sandstone wheels, and for the failures in emery grinding practice and with emery ground knives, are presented.

5. Tabulated results obtained from trials of sandstone wheels of different origin are also given, but no definite conclusions are drawn, since the records are not sufficiently complete.

Clay Shipments Meet With Complications

KALAMAZOO, Mich., November 2, 1925.—International complications, a direct appeal by British shipping interests to the Department of State in Washington and claims aggregating over $1,500 have arisen as a result of the recent arrival in South Haven of the British ocean freighter "Errington Dunsford," loaded with China clay for Kalamazoo paper mills.

W. E. Knight, consignee and representative of English clay mines in Cornwall, is authority for the statement that the whole case involves so many disputed points and so many angles that it can now be settled only through the action of national authorities. He says that the captain of the Errington Dunsford was directly charged with violating United States quarantine provisions and that customs officials so interfered with unloading the ship at South Haven that demurrage charges of between $1,400 and $1,500 have accumulated and must be settled. Mr. Knight is in receipt of a communication from the Associated Shipping interests of Montreal asking for a complete statement of the disputed points in the proposition.

Waste Liquor and Gases of the Paper Industry

Survey of the Recent Domestic and Foreign Patent Literature on the Utilization of Waste Liquors and Waste Gases of the Pulp Industry, 1912-1924

By A. Schrohe[1]

Translated, with additions, by Clarence J. West, Chairman Committee on Abstracts and Bibliography, T. A. P. P. I. (Contribution No. 47 of the Committee).

(Continued from last week)

200. 1924. D.R.P. 401,532. Norwegian 38,681. T.N.M. Molin, Torp Bruk, Norway. Dehydrating peat by means of concentrated waste sulphite liquors.

201. 1924. D.R.P. 404,737. Gustav Pollitz, Berlin. Working up the alkaline waste liquors of cellulose manufacture.

In the soda process, previous methods of operation have made necessary the loss of the incrusting substances suitable for fermentation to alcohol, since the liquor were burned and soda regenerated, or, if the incrusting materials were precipitated, this was usually done with a mineral acid, which results in the formation of sodium chloride or sulphate, which are nearly useless. In order to obtain both constituents, oxalic acid may be used to precipitate the incrusting materials. The sodium oxalate is transformed into calcium oxalate and sodium hydroxide by lime; the former is then treated with sulphuric acid, giving oxalic acid and gypsum; concentration of each solution gives products which may be returned to the process.

202. 1924. D.R.P. 405,612. Paul Knichalik, Madgeburg. Deodorizing the waste gases of the soda process.

The waste gases are passed through a washing tower containing black liquor of 6 to 10° Bé. Since the absorption of the mercaptans by the black liquor is limited, the gases, according to addition patent 407,326, are further washed with fresh liquors in order to completely deodorize them.

Additional Patents Compiled by C. J. West

In the following list, the abstracts are taken principally from Chemical Abstracts. The compiler wishes to acknowledge the assistance of Dr. Edward C. Worden, Milburn, N. J., whose comprehensive patent index added many U. S. patents to this list.

203. 1912. U. S. 1,042,332. Canadian 142,288. Swedish 34,623. G. Ekström. Alcohol from sulphite liquor.

The waste liquor from the sulphite pulp process is treated with calcium carbonate (or similar material) and ammonium sulphate to neutralize the free sulphurous acid, to convert organic compounds loosely combined with sulphurous acid into compounds innocuous to the subsequent fermentation and to increase the quantity of nitrogenous matter in the liquor.

204. 1912. U. S. 1,042,538. C. Ellis. Process of concentrating waste sulphite liquor for use as a road binder.

Concentrated sulphite liquor suitable for use as a binding material for road-surface is prepared by approximately neutralizing the waste sulphite liquor containing the diffusible constituents with lime, separating the solid matters, aerating the liquid for the purpose of removing the methyl alcohol, fermenting it with yeast to remove the saccharine matter, distilling off the volatile substances and concentrating the residue to a density of about 30° Bé (specific gravity, 1.263).

205. 1912. U. S. 1,045,889. E. L. Rinman. Treating black liquors from soda pulp mills.

The black liquors are treated with carbon dioxide to precipitate a part of the organic matter and then with ammonia and carbon dioxide at a temperature favorable for precipitating sodium bicarbonate and separating the latter. (*See also* No. 2).

206. 1912. U. S. 1,046,160. Canadian 142,289. G. Ekström. Alcohol from sulphite liquors.

In making ethyl alcohol by fermenting waste sulphite liquor, sterilized urine is added to the liquor to be fermented to serve as a nutrient for the yeast employed.

207. 1912. British 304. R. von Walther. Manufacture of sulphite cellulose.

In the manufacture of sulphite cellulose, the wood, sawdust, waste paper, etc, is first treated with a weak lye for a short time to obtain a lye rich in glucose, etc., and then treated with the usual lye. The glucose lye can be used for alcohol, lactic, acetic, or other acid fermentation, or as a culture medium for nitrogen fixing bacteria after being, if necessary, neutralized or freed from alkali or acid, or, after concentration, as an adhesive, briquetting, tanning or dressing material.

208. 1912. British 5,411. U. S. 1,075,552 (Oct. 14, 1913). J. A. DeCew. Preserving wood.

Wood, etc., is preserved, seasoned and fireproofed by impregnating it with a mixture of waste sulphite liquor and creosote oil, crude oil, zinc chloride, mercuric chloride or copper sulphate. The wood may be steamed first and is then subjected to vacuum and immersed in the solution, with or without pressure. This process may be repeated.

209. 1912. British 6,652. E. L. Rinman. Treatment of waste liquors from pulp mills.

In the treatment of waste liquors from pulp mills, "black liquor" from soda or sulphate pulp mills is evaporated to dryness and the residue distilled with a strong base such as sodium hydroxide, lime, magnesium oxide, zinc oxide or ferric oxide. Ethyl and methyl alcohols, ketones, such as acetone, and higher ketones, phenols, hydrocarbons, and non-condensable combustible gases are evolved, the condensable portion being suitable for a motor-fuel, or it may be separated into its constituents by suitable means. Sodium carbonate (or, if an excess of base is used, sodium hydroxide) is washed out from the residue, leaving carbon, which may be separated by elutriation, and a metal of the base used forms an insoluble carbonate. In that case the oxide is reproduced by burning. Modifications are specified.

210. 1912. British 8,865. D. R. P. 264,783. E. Pollacsek. Composition fuel.

In the manufacture of composition fuel, coal containing sulphur is mixed with a watery paste of lime in excess of that required to fix the sulphur together with starch, glue, waste sulphite liquor or like binding agent; the mixture being dried, molded and impregnated with an oily composition (composition given, *cf.* C. A. 7, 3,407).

211. 1912. British 11,568. French 447,419. U. S. 1,056,366 (1913). F. Raschig. Explosives.

In the manufacture of explosives, mixing ammonium nitrate with the waste lyes in the manufacture of cellulose sulphite containing such substances of the wood as are not cellulose in a form soluble in water, probably as sulphates. The lye is evaporated to dryness before or after it is mixed with the ammonium nitrate. Thirty percent of an indifferent or inert substance, such as sodium sulphate, may be added. Thus, ammonium nitrate, 60; sodium sulphate, 30; dry residue of the lye, 10.

212. 1912. British 24,125. French 449,953. E. S. Sandberg and G. K. Sunblad. Destructive distillation of organic matter in waste lyes.

According to the usual evaporating process in thin layers for soda-cellulose back waters, 15 to 20 liters can be evaporated

[1] Papierfabricant 23, 30-33, 63-65, 89-92, 158-161, 251-253, 284-287, 293-296, 306-307. (1925).

per 1 square meter heating surface and then charred, whereby, however, the heating effect is greatly reduced in proportion to the porosity. A yield of 80 liters per square meter of heating surface is obtained by pre-drying the lye to partial coking, at 400-500° for one minute, in such manner that each viscous particle not wholly coked is encased by a coked portion, whereby the glutinous nature of the mass is destroyed, whereupon the mass is carried through a counter current of hot gases at an increasing temperature.

213. 1912. British 29,696. French 455,902 (Mar. 4, 1913). U. S. 1,072,032 (Sept. 2, 1913). F. Raschig. Explosives.

Manufacturing explosives by mixing the lyes from the manufacture of cellulose by the sulphite process with potassium or sodium nitrate instead of with ammonium nitrate (*cf.* No. 211) and by mixing potassium or sodium nitrate with the lyes from the manufacture of cellulose by the soda process instead of with the lyes from the sulphite process. The examples given contain potassium nitrate, 70, or sodium nitrate, 68; and 30 or 32 parts, respectively, of dry matter from the lye. (*Cf.* no. 126).

214. 1912. D. R. P. 211,479. B. Grätz. Briqueting of coal with waste sulphite liquor by addition of inorganic substance.

Coal dust is mixed with sulphite liquor with an addition of aluminum hydrate, preferably in the gelatinous condition. (*Cf.* Nos. 26, 31).

215. 1912. D. R. P. 265,536. Addition to 222,191. Badische Anilin und Soda Fabrik. Process for obtaining fine suspension of dye-stuffs insoluble in water.

In the case of leuco compounds of the indigo and thio-indigo series, the leuco solutions of the dye stuff are blown out slowly in the cold into waste sulphite liquor, so that an oxidation only and no precipitation of the dyestuff takes place.

216. 1912. D. R. P. 264,920. Farbenfabriken vorm. Friedr. Bayer. Process for manufacture of sulphur and sulphates from oxygen compounds.

Liquors containing sulphites and bisulphites, alone or in mixture with thiosulphates, are heated with polythionates.

217. 1912. French 442,809. J. Buisson. Apparatus for evaporating liquids, more particularly pulp mill liquids.

The vapors primarily obtained by the evaporation are again heated in order to evaporate fresh amounts of liquor.

218. 1912. French 446,717, 446,718. Aktiebolaget Ethyl. Treatment of waste sulphite liquor for fermentation.

The lactic acid formed in the fermentation vats sets sulphurous acid free, injuring the fermentation enzymes. After neutralization with lime (the liquor must be kept slightly acid during the fermentation) the waste liquor is treated with ammonia or ammonium salts. These are thereby transformed into amido-compounds, which are more valuable as nutriment for the enzyme than the ammonium salts. Previous to the aeration and fermentation oxidizing salts of manganese, chromium, or cobalt are added to the boiling liquor, which is afterwards aerated with compressed air at 90-95° and at last in a coke tower at 25-35° C. (*Cf.* No. 25).

219. 1912. French 449,350. J. Buisson. Utilization of waste wood.

The wood is ground and made into briquettes with waste sulphite liquor. The mixture is carbonized at 350° and cooled in the absence of air.

220. 1912. French 459,069. L. Brunet. Concentrating and purifying paper mill back water.

In the process of concentrating and purifying paper mill back water, the preheated sulphite cellulose lye is sprayed in a tower, and a current of hot air is passed through it, whereby the sulphur dioxide, undesirable for briquetting, is converted into sulphur trioxide, which combined with the lime of the lye, whereupon the calcium sulphate is precipitated.

221. 1912. D. R. P. 282,950. Norwegian 24,561 (1913). E. Lehmann. Concentration of lyes, especially sulphite cellulose waste lyes.

The hot lye is discharged under pressure from the digester, through a pipe, into a vessel where a lower pressure prevails. The steam evolved escapes at the upper part of the vessel and the residual liquor is drawn into the steam injectors and discharged together with the steam through nozzles, against baffles. The lye is thus atomized and a high degree of concentration is obtained.

222. 1912. Swedish 35,706. G. Ekström. Neutralization of acid liquors.

Limestone is used and a thorough mixing is effected by compressed air in a special apparatus.

223. 1912. Norwegian 23,612. P. G. Ekström. Converting cellulose into fermentable sugar and alcohol.

In a process of converting cellulose into fermentable sugar and alcohol, cellulose or sulphite back water is boiled for five hours with 70-80 per cent sulphuric acid. By this treatment is formed cellulose which is soluble in water and by boiling with dilute acid can be converted into sugar. The excess acid is neutralized with a fresh portion of sulphite back water. The boiled lyes from the manufacture of alcohol from turf masses may also be employed, if they are neutralized with some lime.

224. 1912. Norwegian 23,673. H. B. Landmark. Manufacture of alcohol.

In the manufacture of alcohol from material containing cellulose, such as waste sulphite lyes, the latter are mixed with a milk sugar solution (best ordinary skimmed milk) and some sulphuric acid and then heated *in vacuo*. The milk sugar is converted into fermentable galactose and dextrose, while the casein is precipitated by the acid as a mixture of casein and lignin-sulphonic acid. A suitable amount of the waste lye is added to the filtrate and fermented with ordinary beer yeast, after the addition of some calcium carbonate and cooling.

225. 1912. Swedish 34,624. Canadian 142,287. U. S. 1,050,723 (1913). G. Ekström. Alcohol from sulphite liquor.

As a preparatory step to the manufacture of alcohol by the fermentation of the saccharine matters of sulphite wood-pulp liquors, a catalyst for oxidation (*e. g.*, a salt of pure manganese, chromium, or cobalt) and a base (*e. g.*, calcium oxide) are added to the liquor which is aerated while in a hot state; the solid matters are then separated and the liquor cooled and again aerated while cold before fermentation.

226. 1913. U. S. 1,057,211. L. H. Baekeland. Impregnating wood with sulphite liquor.

Wood is impregnated with waste sulphite liquor under heat and pressure to increase its strength, hardness and resistance to fire.

227. 1913. U. S. 1,057,319. L. H. Baekeland. Impregnated wood.

Wood is impregnated with waste sulphite liquors and antiseptic compounds, *e. g.*, zinc chloride, with or without water glass.

228. 1913. U. S. 1,057,416. C. Ellis. Concentrating waste sulphite liquor for use in paper sizing.

The liquor is heated to about 40°, and air blown through at a temperature of 60° to remove a portion of the free sulphur dioxide; the liquor is made alkaline with calcium hydroxide and heated to 60° C. with continued aeration, filtered, concentrated under reduced pressure and the insoluble products filtered off.

229. 1913. U. S. 1,059,716. W. H. Dickerson. Method of treating liquors containing sulphurous acid or sulphites.

In order to prevent the decomposition of waste sulphite liquors during evaporation, a part of the basic constituents is precipitated with sulphuric acid and the solution kept acid during the concentration. Another method is to concentrate in an acid state in the presence of soluble barium compounds.

230. 1913. U. S. 1,063,428. G. Gianoli. Process of producing tanning extract.

Crude, resinous quebracho extracts are rendered soluble by treatment at 95-115° C., with a solution of sodium lignosulphonate, obtained, for example, from waste liquor from sulphite pulp making by treatment with lime water to remove sulphurous acid, followed by sodium sulphate to remove excess of lime.

231. 1913. U. S. 1,068,084. C. Ellis. Road bed construction.

The road material is incorporated wtth a binder consisting of dry sulphite liquor solids and a weighty material. The binder may also be dusted over the road surface.

232. 1913. U. S. 1,069,029-30. J. S. Robeson. Process for treating roads.

With the object of compacting the surface of roads containing clay or clay-forming material, and preventing the formation of dust upon the same, the roads are sprinkled with waste sulphite liquors, the latter being used either in the very concentrated form, somewhat diluted and neutralized or combined with alumina. Oxides of chromium and iron may be used instead of alumina in preparing the mix.

233. 1913. U. S. 1,069,031. J. S. Robeson. Plastic substances from waste lyes.

As a binding material for finely divided inert substances claim is made for a mixture of sulphite liquor and neutral plastic clayey matter pulped together. Feldspathic rock, asbestos, limestone, paper pulp, etc., may be used as fillers.

234. 1913. U. S. 1,075,856-7. J. S. Robeson. Utilizing sulphite lye in road making.

Roads comprising clays or clayey matter are treated first with finely divided calcareous material and then with acidified sulphite waste liquor preparation, preferably containing some sodium lignosulphonate. In the second patent salt is substituted for calcareous matter and the sulphite liquor is used in a concentrated form.

235. 1913. U. S. 1,080,970. M. Hönig. Tanning material from waste sulphite liquor.

The liquor is mixed with an acid, such as sulphuric acid, to form insoluble calcium salts and free a portion of the lignosulphonic acids, adding a soluble salt of the acid used (such as zinc sulphate) to convert the remaining calcium salts into other soluble salts and an insoluble calcium salt, and finally filtering the product through a material (such as oak galls or myrobalans) which forms insoluble compounds with iron.

236. 1913. British 3,313 (Feb. 8). L. Penkala. Agglutinant for fuel or other agglomerates.

An agglutinant for fuel or other agglomerates consists of a preparation containing gelose mixed with waste cellulose liquors, the gelose preparation being obtained from vegetable matters such as seaweed or *Lichen islandicus* by boiling in water or alkali. A pasty mixture of the material to be agglomerated and the agglutinant may be concentrated until slightly viscous and pressed while hot, sodium or potassium silicate and slaked lime, for example, being added or not to render the agglutinant insoluble. The waste liquor may be concentrated before use or replaced by the resinous liquor obtained by distilling the waste.

237. 1913. British 7,324 (March 27). P. G. Müller. Binding material from sulphite lyes.

Waste sulphite lye or cellulose lye is inspissated and mixed by prolonged stirring with carbon disulphide to form a brown or gray product which is applicable as a varnish, paint, covering or binding medium. Anthracite coal or the like, may be mixed with the binder with the aid of heat and briquetted, no coking being necessary to render the briquettes resistant to the atmosphere. Oil, resin, wax, paraffin, camphor, pitch or the like, in a dissolved state, may be added to the carbon disulphide to make the briquettes more resistant and coherent and the carbon disulphide may be removed or not subsequently.

238. 1913. British 14,928 (June 28). A. F. Müller. Treating furnace ashes.

The liquid used may be diluted molasses or waste liquors from cellulose or alkali industries, or mixtures thereof.

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239. 1913. British 24,738 (Oct. 30). G. T. Onsager. Manufacture of alcohol from waste sulphite liquors.

In the manufacture of alcohol from waste sulphite liquors by means of yeast and nutriment, the nutriment used is produced by the hydrolysis of milk sugar, preferably that contained in skimmed milk or whey. The skimmed milk or whey and a little acid to precipitate the casein are added to a portion of the waste lye, and the mixture is heated, preferably in a vacuum apparatus; it is then filtered to remove the casein ligninsulphonic acid compound and the filtrate with an addition of lye and a little acid is heated in a vacuum apparatus to hydrolyze the milk sugar. The liquor is filtered to remove some salts of lime, neutralized with marble powder and fermented with yeast. The casein-ligninsulphonic acid compound can be used as a substitute for casein.

240. 1913. Canadian 146,219. A. Kumpfmiller. Tanning liquors.

A process for the manufacture of tanning liquors consists in incompletely saturating the cellulose sulphite lye with calcium carbonate and then combining the remaining sulphuric acid by the addition of sodium carbonate, separating the liquid from the precipitate, treating with acid and evaporating.

241. 1913. Canadian 151,455. R. W. Strehlenert. Separating the organic and inorganic constituents of sulphite waste liquors.

A process for the separation of the organic and inorganic constituents of the spent liquors from the manufacture of sulphite cellulose consists in heating the said liquor under pressure in the presence of an oxidizing agent.

242. 1913. French 455,059. Norwegian 26,296 (1915). M. Platsch and Hoesch and Co. Water-insoluble briquettes.

The concentrated waste lyes are treated in the cold with a slight excess of sulphuric acid and the precipitated calcium sulphate is recovered. It is sometimes necessary to cool the lyes specially, in order to avoid coagulation of the agglutinating substances liberated by the acid before the briquettes are made. The briquettes made with the purified lyes are dried at a temperature of about 100° C. and a reaction takes place whereby the agglutinating substances are fixed in an insoluble form, while the slight excess of sulphuric acid is decomposed and escapes as sulphur dioxide together with the volatile organic acids of the lye. These acids, being driven off in a concentrated form, may be recovered.

243. 1913. French 456,871. Norwegian 23,673 (1912). H. B. Landmark. Utilizing fermentable carbohydrates in sulphite lyes.

The sulphite liquor is treated with skimmed milk and dilute sulphuric acid, heated until casein is precipitated and filtered. The filtrate is treated with more sulphite liquor and sulphuric acid and heated in order to hydrolyze the lactose. The product may be used as a reducing agent or neutralized and fermented. Whey may be substituted for skimmed milk and is added to the whole of the sulphite liquor at once, since no casein is precipitated.

244. 1913. French 457,159. W. Gunther. Stabilizing sulphite lye.

In stabilizing sulphite lyes used for water purification, the disadvantages resulting from the varying composition of the concentrated lyes is overcome by evaporating them at the lowest possible temperature to dryness so that the organic matter will not be destroyed and by combining the free alkali at the same time or subsequently with carbon dioxide (air combustion gases).

245. 1913. French 460,085. Standard Alcohol Co. Sugar from cellulose.

In a process of obtaining sugar from cellulose, the material is subjected to a hydrolytic action in a solution of a sulphite. The sulphite solutions are obtained as residues from the production of pulp by the sulphite process, and contain a small amount of sugar. These liquors have a hydrolytic action on cellulose, hence, when the cellulose is digested in such a solution, a portion is converted into a fermentable sugar.

(*To be Continued*)

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Is The Cost of Distribution Too High*

By Paul M. Mazur

The well-known slogan of "The High Cost of Living" has practically disappeared from popular favor and the daily comic strips. In its place there has developed another phrase typifing an apparent economic maladjustment. "The High Cost of Distribution."

"Distribution" is usually applied to that part of the economic process which begins when the article is in the hands of the manufacturer in completed form and ends when it is in the consumers' hands ready for consumption. However, distribution is concerned with more than the physical handling of finished goods. As a matter of fact, two of the most important costs of distribution begin and often continue for a long period before the goods are put into the process of manufacturing. Advertising has become an important element in creating a demand for goods to be manufactured; and the use of an expensive selling organization is usually a forerunner of manufacturing. Both of these are costs of distribution, or, more accurately, costs of marketing. They might be, and sometimes are, regarded as elements in the cost of manufacture. It might be well, therefore, to substitute for the phrase, "The High Cost of Distribution," "The High Cost of Marketing."

During the past few years the "high cost of distribution" has attracted the unfavorable attention of economists, business men, trade institutions, and governmental agencies. There has been expressed either a direct or implied opinion that the cost of marketing is too high.

Manufacturers have collected statistics to show that the product doubles or triples in price in its journey from factory to consumer. They have assumed that the manufacturing process could be completely divorced from that of marketing, and that each branch of the economic process could be treated individually upon a statistical basis; whereas in reality it is doubtful whether the actual costs of manufacturing and marketing can be separated into compartments; and it is certainly true that no statistical method has been as yet developed to determine the actual cost of manufacturing independently of those of marketing.

Marketing is a problem which concerns manufacturer, wholesaler, and retailer alike, and must be shared by all three.

This country has developed its industrial machinery to a point of extraordinary effectiveness through mass production and the use of labor-saving devices. The opinion has been expressed that mass production must be paralleled by mass distribution in order to reduce consumer prices. Such a method may be valid, but there is much evidence to indicate an opposite course of economic development. Or, if one finds such a conclusion too radical, there is ample material to believe that our present system of manufacturing is made possible by the present system of marketing.

* From Harvard Business Review.

No Reduction in Operating Expense

With the growth of large department stores there has not come the reduction in operating expense which is often connected in the minds of most business men with large sales volume. There have been statistical studies to prove this thesis. But in most cases, the conclusions drawn are based upon statistics which tell the truth, but not all of the truth. It *may* be true that small stores operate more cheaply than the larger store in their present stage of development. But converting even that fact into a principle that small stores are more economic than the large units depends upon an evaluation of the facts upon the basis of social and economic conditions.

Whether or not the cost of marketing under the present methods is high and by high is meant too high, is not subject as far as is known, to statistical proof. For there are no standards of costs; nor is there any method of isolating operating costs due to ineffectiveness from the increased expenses imposed upon marketing by social and economic conditions..

This article, therefore, can make no attempt to prove its thesis statistically. Any conviction which may be expressed is born, not of a study of accumulated statistics, but from a consideration of the economic history which is responsible for the present industrial system and from a study of the factors which must be included in any estimate of the cost of marketing. Frankly, the purpose of this article is suggestive rather than conclusive. It is hoped that some new material will be included; if not, then perhaps the repetition of well-known arguments will be of some use to those who are at present interested in the problem and costs of marketing.

The writers of this article believe that, considering the economic and social conditions today, the cost of marketing is, by and large, not too high. The present system is a result of economic evolution; and while it may be conservative to accept "what is" as right, still it is fair to say that under a competitive system "what is" has developed because in general it is right. And if it is not right, then competition and not statistics will change the present system to some other which will better satisfy the increasingly exacting demands of our economic process.

Sphere of the Problem

Whether distribution methods are right or wrong, the problem must be faced by retailer and manufacturer alike, and parentage for the orphan cannot be effectively denied by either.

There are undoubtedly certain phases of distribution which are the concern of retailers alone. Those should be accepted by the retailers as their particular province for study and eventually for the determination of improved methods. There is undoubtedly a margin of 4 per cent or 5 per cent of the sales price which represents an area of possible saving. Toward the distributor's

problems the manufacturers must look with sympathy and care, for their solution by the retailer may have far-reaching effects upon the producer.

Distribution and the Industrial Revolution

Let us imagine ourselves to be living in the eighteenth century. We are citizens of a small hamlet of 300 souls. In our midst dwells a shoemaker who by dint of hard labor manages to furnish each person of the community with an annual pair of shoes. His cost is $8 per pair; his price is $10 per pair; his profit is $600. He has no cost of distribution except the time necessary to take orders. Necessity on the part of the citizens creates his demand.

Through ingenuity he develops improved methods of manufacturing. By means of some simple mechanical improvements and a further division of labor, he is able to manufacture 1,000 pairs of shoes at a cost of $4 per pair. Obviously, he must seek markets beyond his own community and his cost of distribution has begun. It becomes apparent that it is true economy both for him and his consumers to spend money for distribution. For if he spends $2,000 for marketing, he can sell his shoes to the consumer for $9 a pair, a saving of $1, and his profit will be $3,000 as against $600 under the previous method—in this case his distribution costs are 20 per cent. They are too high only if they can be reduced and not because they represent 50 per cent of the cost of production.

Such a crude example is, perhaps, so extreme as to challenge criticism. And yet it represents the principle of the change which the Industrial Revolution has caused. With the development of our factory system there was created productive capacity far too great for the local community in which the factory was located, and far too great in the total capacities of all the factories for the demands of the public with its existing standards of living. It became necessary to create larger markets both through the opening of new selling areas and the stimulation of new or under developed desires.

With this need our modern method of marketing was born. Sales organizations set forth upon peaceful invasions which have covered the inhabited portions of the globe. Advertising grew from a nondescript method to an approximate science tremendous in volume, effective in appeal, and stupendous in its dollar expenditures.

Reduction of overhead was the result of increased volume. Increased volume brought lower costs for raw material and lower unit costs for manufacturing. And the circle was completed with the necessity of finding markets for the results of mass production.

Built By Intensive Marketing

The present American industrial structure stands on foundations built by intensive marketing methods. American labor is paradoxically the highest priced and most economical in the world because intensive and extensive marketing has made it possible to develop mass and low unit cost production methods. Americans have been educated to consume a wide variety of articles in tremendous quantities. Marketing methods with intensive selling and convincing advertising have done this. The productive capacity of this country would in large measure lie idle, if the standards of living of today should revert to those of 50 years ago. Buyer's strikes and economy compaigns are bases for uneasiness on the part of the American business man. These tend to take away from us the consumer demand to which we have become accustomed.

The machinery which has developed those demands has become so completely accepted that we forget our duty to it. We are apt to forget the benefits of the system and find fault with apparent burdens. And yet the safety of the industrial superstructure depends upon the strength of the marketing foundation, just as the foundation would be of no value without the industrial structure.

It is wise, even essential, to examine marketing carefully, to improve its effectiveness, to point out its faults. But it is dangerous to industry to make a blanket indictment of marketing without realizing that it is the co-partner of American production.

Retailing

When we narrow the question of marketing down to those agencies which are concerned with the buying and selling of consumer's goods, we find that the problem of the cost of distribution need not include the vexing interrelation of manufacturing and marketing.

The cost of distribution of goods handled by retailers, particularly department stores, is undoubtedly high in the percentage of sales—if we can say 30 per cent to 35 per cent is a high figure. It is not too high, unless some one can indicate what the proper figure should be.

Confusion in Term "Profit"

One of the misconceptions which often exists in the minds of the business man and the general public relates to the profits made by retailers. There is a confusion of terms in the retail business which probably grew up in a natural way and is even still found in the minds of many retailers. When the early traders bought their merchandise for one price, carried it themselves and sold it themselves, they figured the profit as the difference between what they paid and what they received. The shoemaker in the small hamlet probably did the same thing when he figured as his profit the difference between his material cost and his selling price. Today the retailer uses approximately the same terms the trader used a hundred years ago. The manufacturer does not. Gross profit in the retail business consists of the difference between cost price and selling price of merchandise. Merchants talk about that difference as their "profit". Manufacturers do not label as profit the difference between the cost of raw material and the selling price of an article.

In the manufacturing business the cost of an article properly includes the raw material, the labor involved, and in many cases the selling cost. Profit is usually the net residue accruable to the capital account.

For the retailer the raw material is the goods as found in the markets of the world. He, too, has labor charges, rental, depreciation, and overhead. The cost of the merchandise made available for use by the customers must include all these items. And the retailer's profit begins only when the selling price shows an excess over these charges.

Retailers' profits are not large. Seldom do they equal 10 per cent of the sales volume. They average between 5 per cent and 6 per cent for the very well operated units, and for retailers as a whole they probably do not exceed much over 2 cents on each dollar of sales.

Therefore, if the marketing machinery operated by retailers imposes too great a burden upon the customer, it is in the cost of retailing and not the profit of retailing that the difficulty must lie.

Cost of Retailing

The costs of retailing are too high if the service rendered to, *and required by,* consumers can be supplied at a lower expense than that which usually exists.

The services rendered by retailers do not vary totally from those supplied by the manufacturer. The manufacturer is concerned with the physical or chemical conversion of raw materials into a finished product for use by the consumers of the world. The retailer converts the bulk offerings of the manufacturers' markets of the world to assortments of small packages available in one building for selection and purchase by the consumers of a community.

Both manufacturer and retailer must assume the risk in anticipating inventory requirements, plant operation expenses, and organization pay-roll. The retailer's inventory consists of consumer's goods, the uses of which are predetermined; the selling market for which is limited—in a solvent business—to his own establishment. His selling prices depend upon what his own clientele will pay. He must anticipate his needs; he can purchase practically

nothing on the basis of his customer's written advance orders. In clothing the style changes threaten losses through obsolescence of slow-selling items. Weather as well as general conditions are factors in the sale of merchandise which has been procured in anticipation of expected sales.

Advertising

For goods unadvertised by the manufacturer the department store must create demand through advertising, attractive display, and personal salesmanship. For both advertised and unadvertised goods, the department store must direct the demand that is created to its own offerings for satisfaction. Regardless of the selling organization and advertising expenditures of the manufacturer, the retailer must spend money for his own advertising, his own selling organization, his own display, in order to convert a general desire for most merchandise into a specific sale of that merchandise.

Effect of Social and Economic Changes

The manufacturing plant is located and planned upon the needs of productive efficiency. If those needs require it, location and plans can be changed or new units built.

The department store, once located in a shopping center, must stay relatively stationary and adjust itself to the changing economic and social conditions of the community of which it is a part.

Those economic and social changes have been marked in the last decade and have imposed upon the retailers, particularly the large department stores, burdens that have increased distribution expense, but still cannot be charged to distribution, unless urban and social changes are the responsibility of the retailer.

With the growth of urban population have come increased expenses for the department store. The tremendous surburban development that has been so striking in American cities has brought with it complicated delivery problems and increased delivery costs. Packages must travel greater distances, and it has become necessary to build and operate delivery substations to take care of the widening area of the patrons of the centrally located stores.

Increased density of traffic within the city makes automobile trade more difficult to obtain and handle. Parking space is at a premium, and some of the stores in larger cities are arranging for parking space free to their clientele (but at cost to themselves) to make shopping by the "automobile trade" possible.

With the growth of cities have come increased rentals and higher land and building values and increased taxes. Rent, according to many economists, is not a factor in price. But to the shopkeeper who must replace his expiring lease with one requiring a 50 per cent increase, the effect upon volume is negligible, but the effect upon the cost of doing business is very real indeed.

Even to the merchant who owns his building, the effect of increased land values is important. Additions to his land holdings can be procured only at very much higher prices, with consequent higher interest charges. Increased building costs make his depreciation charges heavier. And even his existing land and building feel the effect of the increasing taxes that may come from higher appraisals or higher tax rates called forth by the growing needs of an increasing municipal efficiency.

Occupancy charges represent substantial costs for the retailer and the increased costs experienced during the past five years have been significant and in many cases greater than the increase in volume.

Effect of Social Changes

Social changes, too, have had their effect upon the retailer. Undoubtedly it is wise to improve the working conditions of the workers; and the foresighted merchant will make every effort to safeguard their health. In the long run such precaution will pay for itself. In the meantime it is essential, but it represents added expense of doing business. It is questionable whether such charges are properly costs of distribution rather than costs of protecting good citizens.

It would be interesting to compare the state and municipal requirements of ten years ago with those of today and determine the costs of these to the retail business. The exactions of the health, fire, and building departments cover hundreds of items, each of which has an element of cost within it. Wider aisles mean more rental. Fire-proof buildings, modern stairs, sufficient exits, adequate toilets, proper ventilation and light, are all absolutely essential, but each represents dollar expenditure.

Compensation and liability insurance is compulsory and advisable, but has its expense. Employee aid falls within the same classification. All of these expenditures will and should continue to come with improving social standards. They are proper costs, but they do not represent elements of criticism of the efficiency of distribution.

The changing habits of consumers have had their effect upon the cost of retailing, The consumer is the arbiter of the retailers' methods. Some may say that the retailers have built up luxuries in the distribution machinery, without which the consumer would get along very nicely. However, this is doubtful. The retail business is highly competitive—there are no gentlemen's agreements either as to price or service. If through the introduction of a particular service one retailer attracts business, other retailers must fall in line as a matter of protection, unless their own peculiar service—in price., assortments, style, or quality—is a satisfactory offset.

Increasing Desire for Ease

The American public is increasing its desire for ease. We are a mechanical nation and there is a national desire to have our wants taken care of with as little physical effort as possible. Years ago most consumers carried their purchases with them. Today the percentage of packages delivered by the wagons and trucks of the department stores represents a significant and increasing fraction. Formerly selection was made in the store; now a great many people make a preliminary selection in the store and have a number of units sent to the home, where final selection or final refusal is made. Delivery expenses are increased, merchandise is out of stock, items become shop-worn, expensive organization for checking, rechecking and putting merchandise back in stock must be maintained. The return-goods problem is serious and costly. Is such a cost chargeable to the retailer or to the habits of consumers?

Education is a vital force in America. Our educational system is not limited to science and classics. We are developing a race of stylists and people of meticulous tastes. The standards for merchandising effectiveness are raised as novelty and newness spread with lightning rapidity from coast to coast. More intelligent selling service, too, is demanded, and intelligent service can come only from high-grade, well-selected, well-trained, and well-paid personnel.

Ten years ago the personnel department of a store was an interesting show-place for experiments. Today it is an essential and expensive element in retailing. It has its effect upon productiveness; it will have a greater effect. But as the demands of the consumers for good selling service increase, it becomes necessary to spend more money on selection, training and wages merely in order to maintain selling effectiveness.

In the large store which covers acres of selling area, supervision and protection of stocks against thieving are difficult and costly. Detectives must be employed at an expense; and even with expert protective organizations, the losses due to shoplifting show up in substantial shortages when physical inventories are taken.

With the fall in the value of the dollar, wages have increased. This increase has in part been made up by the increased prices of commodities and larger total volume. But with improved standards of living and increased competition for labor and increased demands on the part of consumers for higher grade service, the

wage levels of department store employees have risen substantially in comparison with volume.

In a measure this same condition of wage increase obtains in the manufacturing business. However, there are some striking ments. If the problem becomes to oserious, the plant can be of the department store, particularly the department store located in a large city.

Possible Relief for Factory

The factory has possible relief from increased wage requirements. If the problem becomes too serious, the plant can be moved to some locality where cheaper labor is available. The growth of the textile business in the Southeast is an evidence of this development. The labor problem of the women's clothing industry in New York has actually caused a radical change in the character of the industrial machinery; and today the large plants have, to a great extent, been replaced by jobbers whose manufacturing is done in hundreds of small contractors' establishments at a lower cost.

The manufacturing plant has another relief from increased labor costs. It is always possible, through increased efficiency resulting from improved methods and the use of labor-saving devices, to reduce unit production costs. The entire American industrial structure is proof of this contention. American labor is undoubtedly the highest paid in the world. Nevertheless, American production costs in general are lower than elsewhere. The use of labor-saving devices is the reason for low unit costs. Each unit of labor is made highly productive through the use of automatic machinery.

The department store has little possibility of avoiding increased costs which result from increased wages. Its location is one of its chief assets and it obviously cannot move to cheaper labor markets. Unlike the manufacturing business, the retailer cannot make very great use of labor-saving devices. His business is primarily not mechanical, but personal. Judgments and personal contacts are of the essence of retailing. Buying and selling ability represent the vital parts of department-store operation. There is little chance for the use of mechanical devices either in buying or selling.

By and large, therefore, increased wages in the department store mean increased costs until the business has been built up over a number of years to a point where the increase in personnel efficiency offsets the increase in wages.

Small City vs. Large City

Not only does this difference in the effect of high wages exist between retailing and manufacturing, but it represents a factor of difference between the department store located in the small city and that located in the large city. Wages in the large cities are, on the whole, higher that those in medium and small-sized municipalities. The efficiency of labor is about uniform. The pay-roll percentage of a store in New York for equal efficiency is apt to be higher than in some community which supports a department store doing business of $500,000 annually. The condition is imposed upon the large store by economic and social conditions. The lack of labor-saving devices makes avoidance of the conditions impossible. Undoubtedly the effect is to increase the expense of retailing in the large city. Can the large distribution institution be properly charged with the responsibility of this additional cost? Nor is this tendency toward increased expenses translated into increased cost for the consumer. Undoubtedly the prices of merchandise which consumers pay in large stores are no more than equal to, and may be less than, those found in the smaller stores. Profits as a whole are as great in large stores as in the smaller units. If in spite of a tendency toward higher expense rates the larger store is enabled to obtain somewhat greater profits without charging higher prices, it is because of its more scientific method of merchandising which results in smaller markdowns.

One of the substantial factors in the expense of retailing is known as "markdowns." This term indicates those reductions from the original selling price of merchandise which the merchant must take to dispose of it. Properly, a mark-down is a loss of profit, but inasmuch as the margin between average cost and selling prices of merchandise must be sufficient to cover this depreciation in value, it can be designated as a cost of operation. In the average retail institution mark-downs vary between 7 and 9 per cent of sales; and in the style merchandise the reductions on selling prices vary between 9 and 12 per cent.

Mark-downs result from conditions both within and without the retailers' institutions. Mistakes in buying either as to quantities, assortments or style may be responsible for the existence of slow-selling merchandise, disposal of which may require reductions in the selling prices. Anticipation of larger sales than are realized may leave unsold quantities upon the shelf. Unforeseen changes in style may reduce the selling value of merchandise already purchased. Unseasonable weather may affect adversely the salability of merchandise procured in advance. Damaged or shopworn goods may require mark-downs for their disposition.

Anticipating Merchandise Needs

Most of the causes of mark-downs lie in the necessity of anticipating merchandise needs. So long as buyers make mistakes, weather becomes unseasonable, and style vagaries of the public remain fickle—mark-downs will continue to exist. The minimizing of mark-downs will depend upon.

1—More accurate control methods.

2—Reducing the period of anticipation.

Control methods in some form exist in nearly all retailing establishments. They are, however, still in the early stages of their development. The improvement of methods will be helpful; but after all, they must be helpful to human beings who will use them as aids to judgment and supervision of the relationship between the buying and selling of merchandise. Whatever reduction of mark-downs comes from the use of intensive application of men and methods will reduce the margin between initial selling prices and the prices at which merchandise is sold; but this saving will be obtained only through the application of time and effort of individuals to the work of supervision and controlling. It is safe to say that the reduction of mark-downs through control methods will increase operating expenses.

The most effective means of minimizing mark-downs lies in the reduction of the period of anticipating merchandise needs. It has been said that the ideal method of merchandising is to procure for today what will be sold today. Risks would be practically eliminated and mark-downs would no longer be a troublesome factor. Such an ideal is obviously impossible of accomplishment. Nevertheless, the tendency is definitely in that direction, and the effective use of control methods will stimulate it.

Consumers impose their desires and their will upon the retailers. True, the imposition of this desire is negative; if goods or services are not satisfactory, the consumer refuses to buy. But the power of consumers is just as great as though their demands were made in positive language or edicts.

The retailers must be guided by the consumers' needs and must act as representatives of the consumers in the market of the world. It is likely, therefore, that so long as consumers purchase in seasonal and unforeseen variation, the merchant must approach a hand-to-mouth policy.

Efficiency Difficult to Maintain

The manufacturer finds that this hand-to-mouth policy makes manufacturing efficiency difficult to maintain. Future long-time commitments on the part of the retailer tend toward constant production and lower costs. The retailer must measure the advantage of lower manufacturing costs against the hazard of markdowns through depreciation. It is not a question of competition between the retailer and the manufacturer. It is entirely a result of the retailer's desire to satisfy the needs of the consumer with the smallest risk to himself.

The emphasis which is being placed upon the high cost of re-

(*Continued on page 66*)

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TABER PUMPS

Fig. 510 illustrates Taber SL Double Suction Centrifugal Pump.

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NEW BRUNSWICK, N. J.
CHICAGO NEW YORK BOSTON

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 7, 1925

SUMMARY

Cigarette paper .....85 cs.
Wall paper .....89 bls., 17 cs.
Paper hangings .....154 bls., 6 cs.
News print .....210 rolls
Printing paper .....427 cs., 3 bls., 75 rolls
Wrapping paper .....395 bls.
Packing paper .....223 bls.
Writing paper .....21 cs.
Cellophane paper .....10 cs.
Filter paper .....21 cs., 147 bls.
Drawing paper .....56 cs.
Silk paper .....2 cs.
Fancy paper .....7 cs.
Decalcomania paper .....67 cs.
Basic paper .....60 cs.
Surface coated paper .....67 cs.
Baryta coated paper .....78 cs.
Colored paper .....5 cs.
Tissue paper .....14 cs.
Paper tubes .....36 cs.
Straw board .....252 rolls
Envelopes .....22 cs.
Writing paper and envelopes .....28 pgs., 6 cs.
Miscellaneous paper .....516 cs., 62 bls.

CIGARETTE PAPER

Standard Products Corp., Paris, Havre, 55 cs.
The Sarong Co., Pipestone Co., Havre, 30 cs.

WALL PAPER

F. J. Emmerich, American Trader, London, 10 bls.
Tice & Lynch, American Trader, London, 1 cs.
W. H. S. Lloyd & Co., Cameronia, Glasgow, cs.
F. J. Emmerich, Adriatic, Liverpool, 11 bls.
F. J. Emmerich, Minnewaska, London, 13 bls.
F. J. Emmerich, Cleveland, Hamburg, 1 cs.
F. J. Emmerich, Cleveland, Hamburg, 2 bls.
Hudson Forwarding & Shipping Co., Homeric, Southampton, 1 cs.
A. C. Dodman, Jr., Inc., Homeric, Southampton, 5 cs.
A. C. Dodman, Jr., Inc., Homeric, Southampton, 53 bls.
B. Illfelder, G. Washington, Bremen, 8 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Trader, London, 41 bls.
W. H. S. Lloyd & Co., American Trader, London, 2 cs.
W. H. S. Lloyd & Co., Caronia, Liverpool, 14 bls.
W. H. S. Lloyd & Co., Caronia, Liverpool, 4 cs.
A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 95 bls.

NEWS PRINT

Irving Bank-Columbia Trust Co., Cleveland, Hamburg, 210 rolls.

PRINTING PAPER

P. C. Zuhlke, Pittsburgh, Antwerp, 81 cs.
Perry, Ryer & Co., Cameronia, Glasgow, 77 cs.
Perkins, Goodwin & Co., Cameronia, Glasgow, 71 cs.
Oxford University Press, Cameronia, Liverpool, 5 cs.
B. E. Drakenfeld & Co., Cameronia, Liverpool, 11 cs.
W. von Doorn, Volendam, Rotterdam, 13 cs.
E. Dietzgen & Co., Volendam, Rotterdam, 51 cs.
Titan Shipping Co., Caronia, Liverpool, 20 cs.
F. L. Kraemer & Co., Celtic, Liverpool, 3 bls.
B. F. Drakenfeld & Co., Celtic, Liverpool, 11 cs.
E. Dietzgen & Co., Cleveland, Hamburg, 13 cs.
Keuffel & Esser, Cleveland, Hamburg, 75 rolls.
Martin & Bechtold, G. Washington, Bremen, 14 cs.
Titan Shipping Co., Aquitania, Havre, 51 cs.

WRAPPING PAPER

F. C. Strype, Cleveland, Hamburg, 395 bls.

PACKING PAPER

J. P. Heffernan Paper Co., Cleveland, Hamburg, 223 bls.

WRITING PAPER

Guibout freres, De Grasse, Havre, 7 cs.
Guibout freres, Pittsburgh, Antwerp, 1 cs.
Japan Paper Co., American Trader, London, 2 cs.
N. Y. Blue Print Paper Co., Masaniello, Marseilles, 8 cs.
Hydroloid, Inc., Minnewaska, London, 1 cs.
Globe Shipping Co., Aquitania, Havre, 2 cs.

CELLOPHANE PAPER

DuPont Cellophane Co., De Grasse, Havre, 9 cs.
DuPont Cellophane Co., Aquitania, Havre, 1 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 9 cs.
American Express Co., American Trader, London, 1 cs.
H. Reeve Angel & Co., Inc., Minnewaska, London, 5 cs.
H. Reeve Angel & Co., Inc., Homeric, Bordeaux, 33 bls.
J. Manheimer, Homeric, Bordeaux, 114 bls.
C. Schleicher Schull Co., Cleveland, Hamburg, 6 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., American Trader, London, 2 cs.
Keuffel & Esser, Cleveland, Hamburg, 54 cs.

SILK PAPER

S. Gilbert, Volendam, Rotterdam, 2 cs.

FANCY PAPER

Whiting Patterson Co., Inc., Aquitania, Southampton, 6 cs.
Doubleday, Page & Co., Homeric, Southampton, 1 cs.

DECALCOMANIA PAPER

C. W. Sellers, Reliance, Hamburg, 4 cs.
C. W. Sellers, G. Washington, Bremen, 7 cs.
Phoenix Shipping Co., G. Washington, Bremen, 1 cs.
Phoenix Shipping Co., Stuttgart, Bremen, 3 cs.

BASIC PAPER

Globe Shipping Co., Pittsburgh, Antwerp, 60 cs.

SURFACE COATED PAPER

Phoenix Shipping Co., Reliance, Hamburg, 11 cs.
Gevaert Co. of America, Pittsburgh, Antwerp, 36 cs.
P. C. Zuhlke, Volendam, Rotterdam, 20 cs.

BARYTA COATED PAPER

Globe Shipping Co., Stuttgart, Bremen, 73 cs.
C. B. Richard & Co., Stuttgart, Bremen, 5 cs.

COLORED PAPER

Phoenix Shipping Co., Stuttgart, Bremen, 4 cs.
Phoenix Shipping Co., G. Washington, Bremen, 1 cs.

TISSUE PAPER

F. C. Strype, Cameronia, 12 cs.
G. W. Sheldon & Co., Cameronia, Liverpool, 2 cs.

PAPER TUBES

H. de Maguinn, De Grasse, Havre, 36 cs.

STRAW BOARD

A. Vuyck, Volendam, Rotterdam, 252 rolls.

ENVELOPES

H. Reeve Angel & Co., Inc., American Trader, London, 2 cs.
Globe Shipping Co., G. Washington, Bremen, 20 cs.

WRITING PAPER AND ENVELOPES

Independent Forwarding Co., Cameronia, Liverpool, 28 pgs.
S. Stern, Caronia, Liverpool, 6 cs.

MISCELLANEOUS PAPERS

E. Dietzgen & Co., De Grasse, Havre, 1 cs.
French-American Banking Corp., De Grasse, Havre, 2 cs.
Japan Paper Co., De Grasse, Havre, 29 cs.
Coenca Morrison Co., De Grasse, Havre, 2 cs.
A. V. Berner, De Grasse, Havre, 4 cs.
R. F. Downing Co., De Grasse, Havre, 9 cs.
Standard Products Corp., De Grasse, Havre, 198 cs.
Liggett & Myers Tobacco Co., De Grasse, Havre, 24 cs.
Japan Paper Co., Duilio, Genoa, 51 cs.
P. C. Zuhlke, Pittsburgh, Antwerp, 23 cs.
P. C. Zuhlke, Volendam, Rotterdam, 42 cs.
International Forwarding Co., Cleveland, Hamburg, 4 cs., 2 bls.
H. S. Chalfont, Cleveland, Hamburg, 60 bls.
J. Kennedy, Paris, Havre, 1 cs.
Hensel, Bruckman & Lorbacher, Paris, Havre, 1 cs.
DuPont Cellophane Co., Paris, Havre, 11 cs.
Coenca Morrison Co., Paris, Havre, 5 cs.
Japan Paper Co., Paris, Havre, 6 cs.
Guibout freres, Paris, Havre, 3 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co., Inc., Ruy. Maru, Algiers, 84 bls. rags.
Central National Bank, Ruy. Maru, Algiers, 337 bls. rags.
A. W. Fenton, Inc., Hemland, Leghorn, 297 bls. rags.
Anglo-South American Trust Co., Hemland, Leghorn, 204 bls. rags.
Atteroury & Co., Hemland, Marseilles, 126 bls. rags.
Salomon Bros. & Co., Hemland, Marseilles, 15 bls. rags.
A. W. Fenton, Inc., Hemland, Genoa, 78 bls. rags.
A. W. Fenton, Inc., Clontarf, Bari, 151 bls. rags.
A. W. Fenton, Inc., Clontarf, Leghorn, 121 bls. rags.
A. W. Fenton, Inc., American Trader, London, 82 bls. rags.
Brown Bros. & Co., Masaniello, Marseilles, 287
E. J. Keller Co., Inc., Masaniello, Marseilles, bls. rags.
185 bls. rags.
National Bank of Commerce, Masaniello, Marseilles, 212 bls. rags.
L. H. Abenheimer, Conehatta, Manchester, 206 bls. bagging.
Anglo-South American Trust Co., Hortensius, Buenos Aires, 145 bls. rags.
D. M. Hicks, Stuttgart, Bremen, 10 bls. rags.
A. W. Fenton, Inc., Stuttgart, Bremen, 289 bls. rags.
Brown Bros. & Co., Stuttgart, Bremen, 156 bls. rags.
Chemical National Bank, Stuttgart, Bremen, 81 bls. rags.
G. M. Graves Co., Inc., Volendam, Rotterdam, 45 bls. rags.
Atlas Waste Manufacturing Co., Volendam, Rotterdam, 33 bls. rags.
E. J. Keller Co., Inc., Volendam, Rotterdam, 29 bls. rags.
Chemical National Bank, Volendam, Rotterdam, 191 bls. rags.
The Stone Bros. Co., Inc., Volendam, Rotterdam, 7 bls. rags.
The Barret Co., Volendam, Rotterdam, 100 bls. rags.
S. Birkenstein Sons, Volendam, Rotterdam, 94 bls. rags.
Chase National Bank, Volendam, Rotterdam, 1250 bls. bagging.
The Stone Bros. Co., Inc., Caronia, Liverpool, 5 bls. rags.
The Stone Bros. Co., Inc., Celtic, Liverpool, 65 bls. rags.
M. Nathan & Co., Celtic, Liverpool, 14 bls. rags.
Amsinck, Sonne & Co., Inc., Celtic, Liverpool, 7 bls. rags.
A. W. Fenton, Inc., P. Gori, Leghorn, 243 bls.
Equitable Trust Co., P. Gori, Leghorn, 93 bls. rags.
rags.
Castle & Overton, Inc., P. Gori, Leghorn, 51 bls. waste.
Brown Bros. & Co., P. Gori, Leghorn, 80 bls. rags.
Amtorg Trading Co., United States, Copenhagen, 5 bls. rags.
Chase National Bank, United States, Copenhagen, 967 bls. bagging.
E. J. Keller Co., Inc., United States, Copenhagen, 125 bls. bagging.
E. J. Keller Co., Inc., United States, Copenhagen, 108 bls. rags.
National Bank of Commerce, Silvercedar, Alexandria, 91 bls. rags.

A. W. Fenton, Inc., Cleveland, Hamburg, 174 bls. rags.
L. H. Abenheimer, Cleveland, Hamburg, 153 bls. rags.
E. J. Keller Co., Inc., Cleveland, Hamburg, 188 bls. rags.
Castle & Overton, Inc., Cleveland, Hamburg, 137 bls. rags.
A. W. Fenton, Inc., Savoia, Naples, 146 bls. bagging.
A. W. Fenton, Inc., Savoia, Naples, 203 bls. rags.
Amsinck, Sonne & Co., Inc., Braga, Marseilles, 121 bls. rags.
National Bank of Commerce, Braga, Marseilles, 299 bls. rags.
State Bank, G. Washington, Bremen, 43 bls. rags.
L. H. Abenheimer, G. Washington, Bremen, 41 bls. bagging.
Shenkers, Inc., G. Washington, Bremen, 5 bls. rag pulp.
E. J. Keller Co., Inc., Genoa Maru, Kobe, 1 b'e. jute waste.
E. J. Keller Co., Inc., London Mariner, London, 50 bls. rags.
E. J. Keller Co., Inc., London Mariner, London, 66 bls. bagging.
E. J. Keller Co., Inc., Mt. Clay, Hamburg, 170 bls. rags.
E. J. Keller Co., Inc., Mt. Clay, Hamburg, 114 bls. bagging.
V. Galaup, Pipestone Co., Havre, 248 bls. rags.
V. Galaup, Pipestone Co., Havre, 44 bls. new cuttings.
Atterbury Bros., Inc., Pipestone Co., Havre, 56 bls. rags.
Atterbury Bros., Inc., Pipestone Co., Havre, 133 bls. bagging.
L. H. Abenheimer, Pipestone Co., Havre, 62 bls. rags.
Castle & Overton, Inc., Pipestone Co., Havre, 39 bls. bagging.
Katzenstein & Keene, Inc., Pipestone Co., Havre, 104 bls. rags.
Salomon Bros. & Co., Pipestone Co., Havre, 104 bls. rags.
J. J. Patricof, Pipestone Co., Havre, 91 bls. bagging.
E. J. Keller Co., Inc., Pipestone Co., Havre, 59 bls. bagging.
Atlas Waste Manufacturing Co., Pipestone Co., Havre, 85 bls. rags.
J. M. Jaffe, Pipestone Co., Havre, 60 bls. new cuttings.
Albion Trading Co., Pipestone Co., Dunkirk, 45 bls. paper stock.
Castle & Overton, Inc., Pipestone Co., Dunkirk, 50 bls. rags.
The Barret Co., Pipestone Co., Dunkirk, 185 bls. rags.
Castle & Overton, Inc., London Mariner, London, 109 bls. bagging.
Castle & Overton, Inc., Isarco, Italy, 120 bls. bagging.
Castle & Overton, Inc., Pres. Harding, Bremen,
Castle & Overton, Inc., Chelma, Spain, 35 bls. rags.
Castle & Overton, Inc., Steel Traveler, Egypt, 62 bls. rags.

OLD ROPE

Brown Bros. & Co., Pittsburgh, Antwerp, 59 bls.
Brown Bros. & Co., Stavangerfjord, Oslo, 43 coils.
Brown Bros. & Co., Stuttgart, Bremen, 35 rolls.
Brown Bros. & Co., Volendam, Rotterdam, 64 bls.
W. Steck & Co., Volendam, Rotterdam, 96 bls.
E. J. Keller Co., Inc., Volendam, Rotterdam, 73 bls.

MANILA ROPE

Ellermans' Wilson Line, American Trader, London, 96 coils.
Ellermans' Wilson Line, Minnewaska, London, 95 coils.

CASEIN

Guaranty Trust Co., Lalande, Buenos Aires, 167 bags.
T. M. Duche & Sons, Lalande, Buenos Aires, 1584 bags.
Atterbury Bros., Inc., Lalande, Buenos Aires, 250 bags.

CHINA CLAY

C. B. Richard & Co., New York City, Bristol, 300 bags.
National City Bank, New York City, Bristol, 550 bags.

WOOD PULP

Buck, Kiaer & Co., Stavangerfjord, Oslo, 200 bls. unbleached sulphite pulp; 400 bls. sulphite pulp.
L. M. Sergeant & Co., Stavangerfjord, Oslo, 475 bls. chemical pulp.
Central Union Trust Co., Stavangerfjord, Oslo, 600 bls. sulphite pulp.
Perkins, Goodwin & Co., United States, Oslo, 150 b.s. wood pulp.
Johanson, Wales & Sparre, Inc., West Gotomska, Frano, 1800 bls. kraft pulp.
M. Gottesman & Co., Inc., Sangstad, Stockholm, 1875 bls. wood pulp.

WOOD PULP BOARDS

Lagerloef Trading Co., Cleveland, Hamburg, 167 bls., 24 tons.

PORTLAND, ME., IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Scandinavian Pulp Agency, Inc., Malmen, Skutskar, 4000 bls. wood pulp.
Bulkley, Dunton & Co., Malmen, Easvik, 5000 bls. wood pulp.
The Borregaard Co., Inc., Malmen, Gothenburg, 2700 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING NOVEMBER 7, 1925

M. Gotteaman & Co., Inc., Sangstad, Stockholm, 1875 bls. wood pulp.
M. Gotteaman & Co., Inc., Nordhval, Stockholm, 6500 bls. wood pulp.
E. J. Keller Co., Inc., Blommersdyk, Mannheim, 506 bls. wood pulp.
Castle & Overton, Inc., Westerner, Rotterdam, 744 bls. wood pulp.
Castle & Overton, Inc., Yori Maru, Hamburg, 825 bls. wood pulp.
Castle & Overton, Inc., ———, Germany, 560 bls. wood pulp.
E. J. Keller Co., Inc., West Inskip, Rotterdam, 108 bls. rags.

NEW ORLEANS IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Castle & Overton, Inc., Montana, France, 774 bls. rags.
E. J. Keller Co., Inc., Meanticut, Antwerp, 148 bls. rags.
E. J. Keller Co., Inc., Meanticut, Havre, 110 bls. rags.

NEWPORT NEWS IMPORTS

WEEK ENDING NOVEMBER 7, 1925

M. Gottesman & Co., Inc., Sangstad, Stockholm, 750 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Castle & Overton, Inc., Westerner, Rotterdam, 280 bls. wood pulp.

CHARLESTON IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Castle & Overton, Inc., Tulsa, Antwerp, 313 bls. bagging.
E. J. Keller Co., Inc., Tulsa, Antwerp, 161 bls. bagging.

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Castle & Overton, Inc., Clontarf, Leghorn, 30 bls. rags.
Mechanics & Metals National Bank, Clontarf, Marseilles, 95 bls. rags.
D. M. Hicks, Clontarf, Leghorn, 438 bls. rags.
W. Schall & Co., Clontarf, Naples, 37 bls. rags.
E. J. Keller Co., Inc., Pipestone Co., Havre, 51 bls. strings.
E. J. Keller Co., Inc., Pipestone Co., Havre, 104 bls. rags.
The Stone Bros. Co., Inc., Pipestone Co., Havre, 31 bls. bagging.
The Stone Bros. Co., Inc., Pipestone Co., Havre, 209 bls. rags.
Salomon Bros. & Co., Pipestone Co., Havre, 215 b.s. rags.
S. Birkenstein & Sons, Pipestone Co., Havre, 62 bls. rags.
Castle & Overton, Inc., Pipestone Co., Havre, 20 bls. rags.
L. H. Abenheimer, Pipestone Co., Havre, 100 bls. rags.
Castle & Overton, Inc., Pipestone Co., Dunkirk, 223 bls. rags.
C. J. Webb, Pipestone Co., Havre, 28 bls. rags.
Castle & Overton, Inc., Kermit, Hamburg, 238 bls. rags.
Castle & Overton, Inc., Napierian, Antwerp, 309 bls. rags.
Castle & Overton, Inc., Eastern Victor, Antwerp, 337 bls. rags.
Castle & Overton, Inc., Yori Maru, Hamburg, 255 bls. rags.
Castle & Overton, Inc., West Campgaw, Hamburg, 148 bls. rags.
Castle & Overton, Inc., Ciara, Italy, 105 bls. rags.
E. J. Keller Co., Inc., Gorm, Copenhagen, 724 bls. rags.
E. J. Keller Co., Inc., Isarco, Naples, 141 bls. rags.
E. J. Keller Co., Inc., Saucon, Genoa, 67 bls. rags.
E. J. Keller Co., Inc., Blommersdyk, Rotterdam, 155 bls. rags.
Castle & Overton, Inc., Dania, Norway, 1000 bls. wood pulp.
Castle & Overton, Inc., Yori Maru, Hamburg, 550 bls. wood pulp.
M. Gottesman & Co., Inc., Facto, Canada, 20,659 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING NOVEMBER 7, 1925

Castle & Overton, Inc., ———, Germany, 2015 bls. wood pulp.
Castle & Overton, Inc., A. Thyssen, Germany, 950 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Malmen, Gothenburg, 5207 bls. kraft pulp.
Scandinavian Pulp Agency, Inc., Malmen, Gothenburg, 1245 bls. sulphite pulp.
Price & Pierce, Ltd., Malmen, Gothenburg, 500 bls. wood pulp.
J. Anderson & Co., Malmen, Gothenburg, 2425 bls. sulphite pulp.
The Borregaard Co., Inc., Malmen, Gothenburg, 1325 bls. wood pulp.
Johanson, Wales & Sparre, Inc., Malmen, Gothenburg, 421 bls. dry soda pulp.
Brown Bros. & Co., Malmen, Gothenburg, 79 bls. rags.
W. Schall & Co., Malmen, Gothenburg, 41 bls. bagging.
Anglo-South American Trust Co., Malmen, Gothenburg, 76 bls. bagging.
First National Bank of Boston, Lalande, Buenos Aires, 1000 bags casein.

Instruction in Pulp and Paper

The Abitibi Poyer and Paper Company, Iroquois Falls, Ont., has reserved its mill class room for the use of students one night a week, who are taking up the correspondence course of study in pulp and paper making which is being conducted by the Institute of Industrial Arts of Gardenvale, Que. The course is based on five text books published under the direction of the Educational Committee of both the Canadian and American Pulp and Paper Associations. The class at Iroquois Falls is being well attended and is under the direction of A. A. Scott of the Service Division.

May Erect Pulp and Paper Mill in Georgia

VALDOSTA, Ga., November 11, 1925.—W. J. Lawrence, of Kalamazoo, Mich.; C. K. Williams, of Easton, Pa., and C. H. Knight, also of Easton, Pa., have just purchased from G. W. and J. E. Varn, the owners, approximately 200,000 acres of land in Echols and Clinch counties at an average price of $8.00 an acre and will, it is understood, enter the paper and pulp wood industry here.

Included in the deal, which involves a tract of land 16 miles wide by 30 miles long, are the Varn turpentine distilleries, tram roads, and other property on the land all of which are being taken over

by the new owners. A large proportion of the forest growth on the area is fine pulpwood, suitable for making certain grades of paper, and with intelligent and conservative methods of re-forestation, it is believed that the tract will furnish a perpetual timber supply for the concern. A total of $2,000,000 was paid for the land and the other properties involved, making it the largest deal in years in South Georgia.

The new owners of the tract have long been identified with paper making in Michigan and Canada, as well as with the chemical and paint industry, and are among the leading manufacturers of their class in the West and while no definite plans have yet been given out, it is expected that a pulp and paper plant will be put up in the near future and set in operation. In the meantime the naval stores operations of the Varn brothers will be continued.

Heavy Rains Insure Ample Power for Holyoke

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 9, 1925.—Heavy rains the last of last week and Sunday has assured, it is believed, ample water power through the winter aided by what will come by way of melting snows. The ground is as yet unfrozen and the rain will percolate the ground and the runoff be slow.

Will Build Mill at Nipigon

The Nipigon Corporation, Nipigon, Ont., will, according to Ernest Rossiter, vice president of the company, erect a mill to turn out 60,000 tons of news print annually, together with the necessary equipment in additional pulp production. The company was recently awarded a large pulp wood section by the Ontario government with sufficient wood to supply a paper mill for many years.

German Production of Chemical Pulp Increases

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—According to the Department of Commerce, German production of chemical pulp rose slightly from 77,890 metric tons in July to 78,082 tons in August, and that of mechanical pulp from 58,456 to 63,617 tons in the same period. The production of paper and boards declined, newsprint dropping from 40,816 tons in July to 39,356 tons in August, all other paper from 107,912 to 97,110 and boards from 31,598 to 29,452 tons.

I. P. Co. Gets Stamp Tax Refund

ALBANY, N. Y., October 27, 1925.—With Judges Cardozo and Pound dissenting and Judge Andrews absent the Court of Appeals affirmed today the judgment against the State in the claim of the International Paper Company for a refund of the amount paid for stock transfer stamps which the paper company maintained were erroneously affixed and canceled in connection with an agreement for the deposit of stock of the *International Paper Company*. No opinion was written. The court of claims had rejected the claim, which was for $8,411.10.

Los Angeles Paper Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

LOS ANGELES, Cal., November 6, 1925.—The Los Angeles Paper Manufacturing Company has erected a building, 50 x 330 feet and is now installing a Guyton & Cumfer Manufacturing Company roofing machine, for the manufacture of a complete line of ready roofings and shingles. The machine will be the latest improved type, built in the United States, and will have a capacity of 3000 rolls of finished roofing per day of 8 hours or 9000 rolls to 24 hours—whether slate, sanded, rough or smooth.

The investment in the new plant is about $300,000. The roofing plant is adjacent to the company's felt mill, which has been established and running 25 years. The president, Mr. Joseph Brown, Sr., will complete his 88th year on December 4. R. E. Brown, is secretary and Joseph Brown, Jr., is vice president; N. L. Brinker, director of sales; W. D. Jacks, assistant director of sales and E. H. Oehler, superintendent of roofing plant.

The plant is located in the Industrial Center on Alhambra Boulevard, opposite beautiful Lincoln Park, on 27½ acres of ground, purchased in 1899, giving ample room for expansion.

Export of Paper From Czechoslovakia

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—Exports of paper and paper products from Czechoslovakia during the first eight months of 1925 amounted to 73,560 metric tons as compared with 66,774 tons in the same period of 1924 and 106,404 tons for the entire year 1924. Shipments were made to Italy, Germany, United States, Austria, Hungary, and France. American purchases increased from 7,145 tons in the first eight months of 1924 to 11,613 tons during the same period this year. There is a marked improvement in the Czechoslovak paper industry due to increased domestic as well as foreign demand.

Shipments of Paper From Finland

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—During the first eight months of 1925 shipments of paper from Finland amounted to 140,628 metric tons as compared with 115,230 tons during the corresponding period last year. Exports of cardboard rose from 18,418 to 32,328 tons during this period, sulphite pulp from 134,758 to 136,242 tons, and sulphate pulp from 42,700 to 52,000 tons. Shipments of mechanical pulp, on the other hand, decreased from 70,176 tons during the former period to 54,022 tons this year, according to a report from Consul McGurk, Helsingfors.

Griggs' Paper Weight Calculator

Griggs' Paper Weight Calculator just issued by Fred W. Griggs, 1805 South Ninth Street, Alhambra, Cal., is a handy little booklet of vest pocket size that will be sure to be greatly appreciated by many paper men. It is used to determine the ream weight of any paper on basis size 25 x 38 from 30 x 150 pounds and on basis sizes 22 x 34 from 14 to 96 pounds. Only one multiplication and possibly one addition is necessary to arrive at an answer.

The little booklet is attractively and substantially bound in leather. A number of calculations have been published in the past but it is doubtful if any have been as complete and convenient as this one. The price is $100.

Prof. Hibbert Head Industrial Chemistry Dept.

Professor Harold Hibbert, D.Sc., Ph.D., late of the University of Yale, and one of the best known industrial chemists, has been appointed to the newly-established chair of Industrial Chemistry at McGill University. Dr. Hibbert, who is now in Europe, is expected in Montreal some time this month, but will not take up his duties permanently until January, as he is engaged in an investigation in Europe of recent and prospective developments in pulp and paper and cellulose-using industries, and will not be free for some months.

He is a graduate of Victoria University, Manchester, from there took his Ph.D, at Leipsic, Germany, and returned to Victoria, where he studied for his Doctor of Science degree, teaching all the time. For some years he was engaged in research work at the Mellon Institute and was on the British Mission at Washington. He had a private practice in New York, which he left for Yale in 1919, and has been connected with that university since.

His duties in the new department will be the study and teaching of, and research in cellulose chemistry, a work which, it is recognized, the tremendous and ever-growing importance to Canada of her pulp and paper industry renders of the first importance, the official announcement states. The chair was established by the recent endowment of $200,000 by the late Mrs. Eddy for the promotion of properly conducted scientific research for the pulp and paper industry. Part of the arrangement is that the companies of the Canadian Pulp and Paper Association will help support the department of chemistry.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, November 11, 1925.

The tone of the local paper trade market is stronger than it has been for some time, manufacturers of all grades enjoying an exceptionally large business as Christmas approaches. R. S. Kellogg, secretary of the News Print Service Bureau, received a report last week on the output of newspapers for the month of October. The report indicates that the newspapers of the nation have broken all records during this month for large size production, and in so doing have consumed a tremendous quantity of news print.

The approach of the holiday season which, with its increase in advertising has stimulated the news print demand, has also had a marked effect on other commodities in the market. The market for kraft paper is strong, as is the market for Manila. The demand for all of the various grades is good, and the outlook for future business is highly encouraging, it is said.

Mechanical Pulp

Spot trading in the ground wood market continues in usual good volume, prices being firm for contract business as well. A good number of shipment orders are reported to have been closed during the last week. Mechanical pulp will soar in price, it is predicted, if the present scarcity of this material continues. The demand continues strong.

Chemical Pulp

In anticipation of higher prices many purchasers of chemical pulp are ordering this material in advance, it is reported. The market being stronger than ever as the result of the situation in Sweden. The stoppage of shipments from this country has created an abnormal demand for imported and domestic grades of sulphite and kraft.

Old Rope and Bagging

The market for bagging is a bit stronger this week, it is reported, all grades inclining toward a rise in prices. This tendency is credited to the continuance of demand from all sources and the increasing scarcity of offerings. The situation applies to foreign as well as domestic grades. The market for old rope remains about the same.

Rags

Foreign rags are experiencing a good demand in the countries where they are manufactured, so that home consumption is a little stronger, and prices there are higher than in America. There is also a good demand in America for domestic rags.

Waste Paper

The market for waste paper remains the same as the week before, the better grades holding firm, and the lower ones still evidencing a slight easing off. The market for old kraft paper has not advanced much, but the time is about ripe, it is said, for an increase in prices. The mill demand is about the same.

Twine

The holiday season continues to stimulate the twine industry, there being an unusual demand for this material on Christmas orders for department stores. It is felt, however, that the market will continue to expand when the season has passed, the situation in general being good.

Attorney General Inquires About Associations

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 11, 1925.—Congress should consider whether legislation is not required to cope with the "new form of business organization," the trade association, Attorney General Sargent suggests in an opinion rendered in response to a request by the Federal Trade Commission on what its powers are in the conduct of investigations called for by Congress. The immediate question raised by the Commission was whether it has statutory authority to make an investigation of open-price associations requested by resolution.

A provision in the law appropriating the Commission's funds for the current fiscal year stipulated that no part should be expended for investigations requested by either House of Congress except those authorized by concurrent resolution, but with the limitation that this should not apply to investigations in connection with alleged violations of the anti-trust laws by any corporation. The Commission was in doubt as to whether the congressional resolution on open-price associations, among others, was so worded as to allege a violation of the anti-trust laws by a corporation.

Attorney General Sargent stated that "the failure to specify any corporation by name can not be given controlling effect, as Congress might properly be reluctant to charge a corporation with violating the law in a public resolution. Such allegation serves merely as a basis for directing an investigation; and the better practice clearly would be to await the results of the investigation before publicly citing the corporation * * * *".

COST OF DISTRIBUTION

(*Continued from page 60*)

tailing will, if effective, concentrate the effort upon the factor in retailing which offers the greatest possible chance of saving. That factor is mark-downs. And reduction in mark-downs will come through the reduction of the period of anticipation of consumers' needs. Once manufacturing begins to be merchandise upon the basis of consumption, mass production will have passed its peak. Until recently, marketing has been concerned with the disposal of mass production. It is not to be expected that America will depart from a quantity-production basis, but it is possible that production costs will increase, if pressure is removed from the present-day intensive selling methods. Manufacturing for a normal market, and finding a market for normal manufacturing capacity, are not synonymous. The former puts the burden upon industry; the latter requires high-pressure marketing methods.

Conclusion

That the fields of marketing, distribution and retailing give opportunity for further economies is unquestioned. Those economies will be won only slowly and after careful study and with improved administration. That there is any tremendous waste in distribution has been unproved and will remain so until there can be established standards of practice and cost; and until the interlocking relationship between manufacturing and marketing costs can be divorced and analyzed separately.

The manufacturer, wholesaler, and retailer are passengers upon the same industrial vessel, and no one can sit calmly by, watching the water pour into the the hold through a hole created by the public loss of confidence either in manufacturing costs or the retailers' charges. The manufacturer is vitally interested in the effect that changes in marketing will have upon his own problems.

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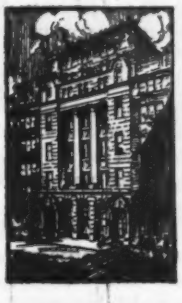

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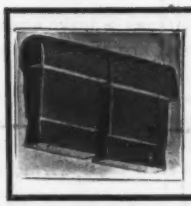

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Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, November 11, 1925.

The principal chemical manufacturers report fairly satisfactory business. No changes in market price on the various materials are reported, however. Spot demand for materials is good and the market's general trend remained constant and vigorous. The outlook is optimistic, according to the most conservative viewpoint. Any change that might occur in present predictions could only be for still better business than is anticipated, it is felt.

BLANC FIXE.—In the market for blanc fixe there are a constantly increasing number of inquiries about contract shipments. The demand for spot business has remained steady. Price quotations range from $60 to $70 a ton for the pulp and from $75 to $90 for the powder.

BLEACHING POWDER.—There has been no abatement in the active demand for bleaching powder experienced by manufacturers during the last few weeks. This fact, coupled with the increase of cost in making the material, has tended to maintain the high prices applying to contract deliveries and spot sales. Prices remain unchanged. They are quoted at from $2.00 to $2.40 per hundred pounds, in large drums, at works.

CAUSTIC SODA.—The leading manufacturers of caustic soda continue to report renewals of contract business along with large volume withdrawals of this material from the factories. The market is characterized by the same steady tone it has shown of late, though accumulations are still low. The prevailing quotations are from $3.10 to $3.15 per 100 pounds at works.

CASEIN.—No change marks the trend of the casein market, the same moderate amount of business being done by manufacturers and dealers alike, it is reported. The general quotation stretches anywhere from 13 to 14 cents a pound for domestic grades to 13.50 to 14.75 for imported stuff.

CHINA CLAY.—Shipments of china clay are coming in with usual regularity, there being no changes reported in the steady good demand for this material. Prices on imported grades are quoted at from $14.50 a ton to $22.50. Domestic grades continue to vary between $12 and $15 for the same amount.

CHLORINE .—With no wane in the popularity of chlorine in chemical circles, added shipments of this material continued to pour into the market last week, prices remaining stable, and the outlook, judged by orders placed for the new year, never much brighter. These orders are being placed at 4 cents a pound in tanks or multi-unit cars at works. For spot sales the price is quoted at 4½ cents a pound.

ROSIN.—Fluctuation in the price of rosin continues, the reason according to reports, being the scarcity of this material in America and an abnormal demand from foreign dealers. Orders remain light on all grades. Paper makers grades are quoted at $15.55 to $15.60 in barrels of 280 pounds.

SALT CAKE.—The salt cake market continues a little firmer than previously, the market remaining in most instances at from $17 to $20 a ton, in bulk, at works.

SODA ASH.—There is still a large demand for soda ash which manufacturers continue to meet by increased production. Spot sales are rather quiet compared to the activity in shipment contracts. Prices are quoted at from $1.26 to $1.63 cents a pound, in bulk at works.

STARCH.—Dealers are still enjoying the recent decrease in the price of starch made by refiners because of the drop in the cost of grain. Special paper starch is selling at $3.32 per 100 pounds in bags and in barrels.

SULPHATE OF ALUMINA.—The paper industry's demand for sulphate of alumina continues as usual to stimulate shipments of this material. The price is quoted at from $1.40 to $1.50 per 100 pounds for commercial grades, and from $2.00 to $2.30 for the iron free in the same amounts.

SULPHUR.—Nothing these days seems to disturb the steady, active lines of shipment and spot business in the sulphur market. The price remains at from $19 to $20 a ton, in bulk, ship side, and from $15 to $16 a ton, at mine.

TALC.—There has been no change in the usual good market for talc, the demand remaining constant, and the prices staying at $17 to $18 a ton, all according to grade.

Boston Business Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 6, 1925.—Further though moderate improvement featured local paper trade business this past week. Boston, like many other cities the country over, is enjoying the benefits of an increased general business.

The only price changes of note during the week were in Chip and News Board, the former going from $47.50 to $45.00 and the latter from $50 to $47.50. Buyers, however, are only interested in immediate needs and when they give an order it is usually for "rush" and nine times out of ten for some special run. On the other hand the corrugated board and container mills are running to capacity, being the only branch of this industry that has not shown any let-up.

In the fine grade division the story is one of "hustle and bustle" with a steady and generous flow of stock going through the usual channels. Printing houses, large and small, are extremely busy with a variety of orders. This seems to be the season for "drives" and "campaigns" and most of them are direct-by-mail, thus giving the printers about all they can do. All this, of course, reflects itself upon the fine grade paper houses who must supply the stock.

Wrappings and shippings report a busy week in all lines. This particular branch of the industry is enjoying the improved retail business referred to earlier in this letter. Men in this business look for a record November in sales volume. Several of the coarse paper houses have been caused to keep night forces working in their shipping department—something new for these parts.

Building activities have kept roofing moving generously. The rag market has little to report except that burlap bagging and old ropes continue strong in price and hard to find, mills carrying small reserves and buying from hand-to-mouth.

To Hold Safety Conference at Green Bay

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 9, 1925.—Paper mills of Appleton, Kaukauna, Neenah, Kimberly, Wausau, Marinetta, Port Edwards, Green Bay and other cities will be represented in a district industrial safety conference which will be held in the last mentioned city on December 9. The conference will be held in Hotel Northland under the auspices of the National Safety Council and will be a one-day event bringing to Green Bay a sample of the energy and enthusiasm of that organization.

Wisconsin is represented on the National Safety Council by nearly 200 industrial plants. Green Bay has 12 member firms. Among the concerns which have promised to cooperate are the Northern Paper Mills, the Fort Howard Paper Company, the Hoberg Paper and Fibre Company, the Bay West Paper Company, the Paper Novelty Company, and several concerns in other industries.

A local committee on arrangements is composed of W. J. Peacock, Northern Paper Mills; A. W. Icks, city commissioner; L. P. Ziebell, of the Wisconsin Public Service Corporation; O. W. Brightman, of the Green Bay Planing Mill, and Ira H. McIntyre, representing the city schools.

Safety experts of ten Wisconsin cities had a meeting in Green Bay recently to make preliminary plans for the district conference. The meeting unanimously requested Judson G. Rosebush, general manager of the Northern Paper Mills, to repeat the famous address on "The Philosophy of Safety," which he delivered at the National Safety Congress at Cleveland recently. About 200 delegates will attend the conference.

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Brompton Pulp and Paper, 6s 1927	94	96
Beaver Board, 8s 1933	92	94
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Products Corp., 7½s 1942	104	106
Belgo Canadian Paper, 6s 1943	101	103
Brown Paper Co., 8s 1931	102	...
Berlin Mills, 5s 1931	98	...
Bryant Paper Co., 6s 1942	99	102*
Brown Company Serial, 6s 1925-43	97	100
Central Paper 6½s 1925-42	91	94
Cape Breton Pulp and Paper, 6s 1932	100	...
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	98	100*
Donnaconna Paper Co., Ltd., 6s 1940	99	101
Eddy Paper, 7½s 1931	100	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	87	95*
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co., 7s 1942	95	99
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	99	...
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	97	...
Kenmore Pulp and Paper Co., 6s 1937	90	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	104	...
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	102	105
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	101	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	98	100*
Parker Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	99	101
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A. 8s 1940	115	118
Riordan Paper, 6s 1924	99	101
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Maurice Paper Co., Ltd., 5½s, 1929	98½	99¼
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	96	99
Smith (Howard) Paper Mills, 6s 1934	98	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	86	90
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
S. D. Warren Company, 6s, 1945	97	100
Whittaker Paper, 1st 7s 1942	98	...
Watab Paper Co., 6½s 1942	100	104
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	88	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	67	70
Abitibi Power and Paper, Pfd	103	...
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	77	...
Beaver Board, Com.	4	6
Beaver Board, Pfd	32	35
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Com	49	54
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	260	270
Jessup & Moore Paper, Pfd	80	...
International Paper Co., Com	55	60
International Paper Co., Pfd. 6%	75	80
Mengel Company, Com	60	65
Mengel Company, Pfd	83	93
Oxford Papers, Com	102	...
Oxford Paper Co., Pfd	100	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	47	50
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	83	85
St. Regis Paper Co., Cap	54	56
Spanish River Pulp and Paper, Com	97	101
Spanish River Pulp and Paper, Pfd	109	...
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper, Cap	...	47
West Virginia Pulp and Paper, Pfd	95	105
Whittaker Paper, Com	50	...
Whittaker Paper, Pfd	60	70

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, contract, '26	3.25	@ 3.65
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream		
White No. 1	.70	@ .90
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.65	@ .75
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.75	@ 6.25
No. 2 Domestic	5.10	@ 5.50
Southern	4.75	@ 5.00
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	4.50	@ 5.00
No. 2 Fibre	4.25	@ 4.75
Common Bogus	2.50	@ 2.75
S. Screening	3.00	@ 3.50
Card Middles	4.00	@ 5.00
Boards—per ton—		
News	45.00	@47.50
Straw	57.00	@60.00
Chip	42.00	@45.00
Binders' Boards	72.50	@77.50
Sgl. Mia. Lt. Chip	58.00	@60.00
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	35.00	@40.00
Dry	38.00	@42.00
(F. o. b. Mill)		
No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.00	@ 4.50
Easy Bleaching	3.25	@ 3.60
No. 1 strong unbleached	2.95	@ 3.25
No. 2 strong unbleached	2.80	@ 2.95
No. 1 Kraft	3.00	@ 3.25
Sulphate—		
Bleached	3.75	@ 4.00
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	4.00	@ 4.75
Easy Bleaching Sulphite	3.00	@ 3.25
News Sulphite	2.75	@ 2.90
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	3.00	@ 3.25
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.25	@15.00
New White, No. 2	8.00	@10.00
Silesias No. 1	9.75	@10.50
New Unbleached	14.00	@14.62½
Washables	8.00	@ 8.25
Fancy	9.25	@ 9.75
Blue Overall	11.50	@11.75
New Blue Prints	7.25	@ 7.75
New Soft Blacks	5.75	@ 6.00
Mixed Khaki Cuttings	6.75	@ 7.25
Pink Corset Cuttings	11.25	@11.75
Pink Muslin	10.00	@10.50
New Light Seconds	3.50	@ 3.75
O. D. Khaki Cuttings	7.00	@ 7.50
Men's Corduroy	5.75	@ 6.25
New Mixed Blacks	4.00	@ 4.50

Old Rags

White, No. 1—		
Repacked	6.75	@ 7.25
Miscellaneous	6.25	@ 6.75
White, No. 2—		
Repacked	4.00	@ 4.25
Miscellaneous	3.50	@ 3.75
St. Soiled, White	2.90	@ 3.00
Thirds and Blues—		
Repacked	3.75	@ 4.00
Miscellaneous	3.00	@ 3.25
Black Stockings	3.75	@ 4.25
Roofing Rags—		
Cloth Strippings	2.30	@ 2.40
No. 1	2.30	@ 2.40
No. 2	1.90	@ 2.00
No. 3	1.50	@ 1.60
No. 4	1.60	@ 1.70
No. 5A	1.15	@ 1.25

Foreign Rags

New Light Silesias	9.50	@10.00
Light Flannelettes	10.50	@11.00
Unbleached Cottons	14.00	@14.50
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@10.50
New Light Prints	9.00	@ 9.50
New Mixed Cuttings	4.25	@ 4.50
New Dark Cuttings	4.00	@ 4.25
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.25	@ 8.25
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.50
Ord. Light Prints	3.25	@ 3.75
Med. Light Prints	2.50	@ 3.00
Dutch Blue Cottons	3.50	@ 4.00
Ger. Blue Cottons	2.75	@ 3.00
Ger. Blue Linens	4.00	@ 4.25
Checks and Blues	3.25	@ 3.50
Linsay Garments	2.15	@ 2.45
Dark Cottons	2.10	@ 2.20
Shoppery	2.00	@ 2.10
French Blues	3.75	@ 4.25

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.60	@ 4.00
Domestic	3.75	@ 4.00
Wool Tares, light	2.85	@ 3.00
Wool, Tares, heavy	2.90	@ 3.10
Bright, Bagging	2.75	@ 2.90
Mixed Bagging	2.40	@ 2.50
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.75	@ 1.80
Small Mixed Rope	2.25	@ 2.50
Manila Rope—		
Foreign	5.50	@ 5.75
Domestic	6.50	@ 7.00
New Bu. Cut	4.00	@ 4.25
Hessian Jute Threads—		
Foreign	4.50	@ 5.00
Domestic	4.25	@ 4.75

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard. White, No. 1	3.60	@ 3.80
Hard. White, No. 2	3.20	@ 3.40
Soft, White, No. 1	3.00	@ 3.25
Flat Stock—		
Stitchless	1.30	@ 1.40
Overissue Mag	1.30	@ 1.40
Solid Flat Book	1.20	@ 1.30
Crumpled No. 1	.85	@ .95
Solid Book Ledger	1.90	@ 2.00
Ledger Stock	1.50	@ 1.60
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	3.25	@ 3.40
New Cut No. 1	1.65	@ 2.00
Extra No. 1 old	1.20	@ 1.90
Print	.75	@ .85
Container Board	.65	@ .75
Bogus Wrapper	.75	@ .85
Old Krafts Machine compressed bales	2.35	@ 2.50
News—		
No. 1 White News	2.00	@ 2.10
Strictly Overissue	.75	@ .85
Strictly Folded	.67½	@ .75
No. 1 Mixed Paper	.50	@ .55
Common Paper	.30	@ .75

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.42	@ .45
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C. 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .61

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COTTON WASTE :: LINTERS :: RAMIE

Finished Jute—			
Dark, 18 basis...	.30	@	.31
Light, 18 basis..	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.21	@	.23
Tube Rope—			
4-ply and larger..	.15½	@	.17½
[illegible]			
4-ply and larger..	.20	@	.28
4-ply [illegible]	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14½	@	.15½
Paper Makers' Twine Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Ameri. Hemp, 6...	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis.....	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond.....	35	@	40
No. 1 Rag Bond...	25	@	35
No. 2 Rag Bond...	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond.....	7	@	10¼
Sulphite Ledger....	9	@	12
Superfine Writing..	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book.	5½	@	7½
No. 1 S. & S. C. Book	6	@	7¼
Coated Book.....	7½	@	10
Coated Label.....	7½	@	10
News—Roll, mill...	3½	@	4¼
News—Sheets, mill	3¾	@	4½
No. 1 Manila.....	4½	@	5½
No. 1 Fibre.....	4½	@	5
No. 2 Manila.....	4	@	4½
Butchers' Manila..	3¾	@	4½
No. 1 Kraft.....	6	@	6½
No. 2 Kraft (Northern Grade)	5	@	5¼
Kraft (Southern Grade)	4¾	@	5
Wood Tag Boards.	4¼	@	6¼
Sulphite Screenings	3	@	3¼
Manila Tissue, 24x36 sheet	7½	@	7½
White Tissue, 20x30 sheet	7¼	@	7½

Boards, per ton—
(Delivered Central Territory)

Plain Chip	45.00	@	47.50
Solid News.....	47.50	@	50.00
Manila Line Chip.	57.50	@	60.00

Container Lined— (Delivered Central Territory)			
85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.25	@	3.50
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.90	@	3.10
No. 1 Mixed....	1.45	@	1.50
No. 2 Mixed....	1.15	@	1.20
Ledger and Writings	1.55	@	1.60
Solid Books	1.45	@	1.50
No. 1 Light Books	1.00	@	1.05
Blanks	2.00	@	2.10
Kraft	2.45	@	2.50
New Kraft Cuts.	2.70	@	2.80
Manila Envelope Cuttings	2.50	@	2.60
Ex. No. 1 Manila..	2.25	@	2.35
Print Manila	1.05	@	1.10
Folded News (oversize)	.90	@	.95
Old Newspapers—			
No. 1	.80	@	.85
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.75	@	.80
No. 2	.55	@	.60
Straw Clippings.....	.75	@	.80
Binders Clippings..	.75	@	.80
Roofing Stocks, f. o. b. Chicago, Net Cash—			
No. 1.....47.00		@	52.00
No. 2.....45.00		@	50.00
No. 3 .....43.00		@	48.00
No. 4.....41.00		@	46.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.10½
Rag Content.....	.17	@	.45
All Rag	.36½	@	.51
Writings	.08	@	.20
Superfines	.22	@	.50
News	.04	@	.04½
Book, Super	.08	@	.10
Book, Coated	.09	@	.14
Coated Litho.....	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1.	.11	@	.12
Manila, Sul. No. 1.	.05	@	.05
Manila, Sul. No. 2.	.03¾	@	.04½
No. 1 Kraft.....	.05¾	@	.06½
No. 2 Kraft.....	.05¼	@	.05¾
Common Bogus....	.02½	@	.02¾
Straw Board	—	@	50.00
News Board	—	@	47.50
Chip Board	—	@	45.00
Single Manila Pulp lined board 57.50		@	60.00
Single White, patent coated board 75.00		@	82.50
Wood Pulp Board..	80.00	@	85.00
Binder Boards.....75.00		@	85.00
Tarred Felts—			
Regular 61.00		@	63.00
Slaters 66.00		@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	3.75	@	4.00
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White..	.02¾	@	.03
No. 2 Soft White..	.02½	@	.03
No. 1 Mixed.....	1.60	@	1.75
No. 2 Mixed.....	1.25	@	1.50
Solid Ledger Stock	2.00	@	1.75
No. 1 Books, Heavy	1.25	@	—
No. 1 Books, Light	—	@	1.25
No. 1 New Manila.	2.50	@	2.60
No. 1 Old Manila.	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.25	@	2.35
Overissue News	1.00	@	1.10
Old Newspapers	.70	@	.85
No. 1 Mixed Paper	.60	@	.47½
Box Board, Chip..	.60	@	.50

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.37½
Domestic	—	@	3.50
Manila Rope	—	@	5.50
Mixed Rope	2.00	@	—
Scrap burlaps ...	—	@	2.37½
Wool Tares, heavy.	2.50	@	2.75
Mixed Strings...	—	@	1.90
New Burlap Cutting	—	@	3.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1...	.11	@	—
New Unbleached.	.14¼	@	.15
Washable	.07¼	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls.....	12½	@	—
New Black, soft...	.07	@	—
Khaki Cuttings.....	.07	@	—
Corduroy	.04	@	.05
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1 .....10.00		@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous.....	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous ...	3.50	@	—
Roofing Stock—			
No. 1	2.15	@	—
No. 2	1.90	@	—
No. 3	1.75	@	—
No. 4	1.90	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2.....	.16	@	.25
Fine, No. 3.....	.12	@	.20
Book, M. F.....	.06¾	@	.07
Book, S. S. & C...	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph.	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila.	.09½	@	
Manila Sul., No. 1	.04½	@	.06
Manila No. 2.....	.04	@	.04½
No. 2 Kraft.....	.05¼	@	.05¾
No. 1 Kraft.....	.06¼	@	.06½
Common Bogus ...	.02¾	@	—
Straw Board 56.00		@	55.00
News Board 45.00		@	—
Chip Board 47.50		@	—
Wood Pulp Board.	4.50	@	5.00

(Carload Lots)

Binder Boards—			
Per ton 75.00		@	80.00
Carload lots 65.00		@	70.00
Tarred Felts—			
Regular 66.00		&	68.00
Slaters 70.00		@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply.	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Domestic Rags—New

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06	@	.08
Silesias, No. 1...	.10½	@	.11
New Unbleached.	.14	@	.14½
Washable	.07½	@	.07¾
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.12
New Blue.....	.04	@	.04¼
New Black Soft..	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings..	.06½	@	.07
Corduroy	.04	@	.04½
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05½

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	4.75	@	6.00
Sisal Rope	2.50	@	—
Mixed Rope	1.00	@	1.35
Scrap Burlaps....	2.25	@	2.50
Wool Tares, heavy.	2.00	@	2.10
Mixed Strings...	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.25	@	3.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.35
No. 1 Soft White	2.60	@	2.70
No. 2 Soft White	2.00	@	2.30
No. 1 Mixed....	1.50	@	1.60
No. 2 Mixed....	1.00	@	1.10
Solid Ledger Stock.	1.75	@	1.90
Writing Paper	1.60	@	1.80
No. 1 Books, heavy	1.30	@	1.40
No. 2 Books, light.	1.20	@	1.25
No. 1 New Manila.	1.80	@	2.00
No. 1 Old Manila..	1.60	@	1.75
Print Manila.....	1.25	@	1.35
Container Manila..	1.00	@	1.10
Old Kraft	2.00	@	2.10
Common Paper....	.50	@	.60
Straw Board, Chip.	.60	@	.65
Binders Bd., Chip..	.60	@	.65
Over issue News...	.85	@	1.00
Old Newspaper....	.70	@	.75

Old White, No. 1—

Repacked	6.75	@	7.00
Miscellaneous ...	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05½
Miscellaneous ...	.04¾	@	.05
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous ...	2.75	@	3.00
Black Stockings.	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.10½	@	.12½
Light tinted	.11	@	.13½
Dark tinted	.12½	@	.15
Ledgers (sulphite).	—	@	.13
Ledgers No. 1.....	.36	@	—
Ledgers No. 2.....	.27	@	—
Writing	.09½	@	
Writing S. C.	.16	@	
News f. o. b. Mills—			
Rolls (carloads)..	3.50	@	—
Sheets (carloads).	—	@	4.25
Sheets (2 tons or over)	—	@	4.60
Book—			
No. 1 M. F. (carloads)	8.00	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.50	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and litho 14.50		@	—
No. 2 Coated and litho 13.50		@	—
No. 3 Coated and litho 12.75		@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila ...	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.....	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood 30.00		@	32.50
Sulphite easy bleaching 60.00		@	65.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	80.00
Sulphate 62.50		@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. cut..3.65		@	—
Soft White Book shavings	—	@	3.15
White Blk, News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)1.25		@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers ...	1.40	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas..	1.10	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News ...	.90	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto		Per lb.	
No. 1 White shirt cuttings	.14½	@	.14¾
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites..	—	@	—
Third and blues...	—		—